

Rev. 2015-07-30

TALURIT™

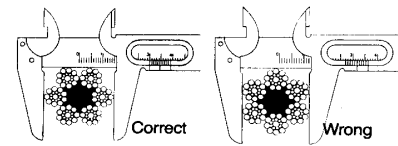
Splicing Instructions

*The original
mechanical splicing systems.*

TALURIT™

FERRULE SECURING INSTRUCTION - TALURIT™ Rev. 2014-09-06

Please note these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



Checking of the wire rope:

Begin by checking the diameter of the wire rope.
The measured diameter is applicable.

Check rope type, rope grade, type of rope lay and fill factor (f) or metallic cross-sectional area factor (C). Make sure the wire rope corresponds to requirements in the tables for each ferrule type.

$$f = \frac{A}{A_u} \quad C = f \cdot \frac{\pi}{4}$$

Fill factor (f): The ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope (A) and the circumscribed area (A_u) of the rope based on its nominal diameter (D).

Ensure that the cut ends of pre-formed wire rope do not unlay. If a served rope end is to be pressed within the ferrule the serving shall consist only of a strand or wire. The serving material shall be of aluminium or annealed steel and shall have a tensile strength no greater than 400 N/mm². The diameter of the serving shall be no greater than 5% of the nominal rope diameter. Any serving within the ferrule before pressing shall be no longer than 0,5 x nominal rope diameter and the overall length of serving shall extend no further than 1 x rope diameter from the rope end.

Annealed ends must not be pressed inside the ferrule and annealed ends should not be longer than 0,5 x the wire rope diameter. Please also see our separate instructions for annealing machines type AV. Please note that our ferrules should only be used on new wire ropes.

Types of ferrules and their use:

T-ferrules (T), T-Konit™ (TK), T-Konit™ with inspection hole (TKH), Ultragrip™ Metal (UM), Konit™ (K), Steel (ST), Slimsteel™ (SLST), Steel (STD) and Round (R) are intended for use on steel wire ropes made from carbon steel. The Copper ferrule (TCU), Round copper ferrule (RCU), stainless steel ferrule (INOX) and stainless steel terminals are intended for use with stainless steel wire ropes.

Note! Only ferrules type T, TKH and UM correspond to the European standard EN 13411-3.

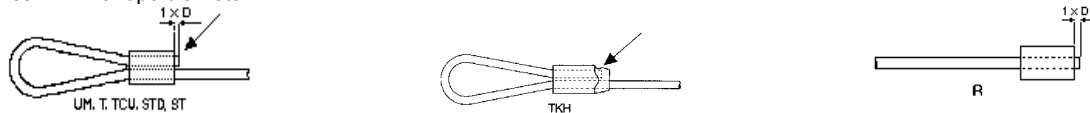
Select correct ferrule size:

The correct size of ferrule is selected from the applicable table for each type of ferrules. Note applicable rope types in each table. All our aluminium ferrules comply with this quality specification and to other material specifications stated in the ruling standards. All our ferrules are seamlessly extruded over mandrel.

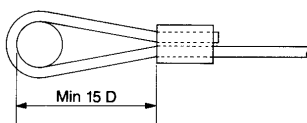
Ferrule selection is based on the following criteria: the rope grade, the diameter of the wire rope, the fill factor or metallic cross-sectional area factor, the wire rope core i.e. fibre core (FC) or steel core (IWRC= independent wire rope core).

Assembly of the wire rope in the ferrule:

Enter the wire rope into the ferrule. When the loop is formed the end of the wire rope is returned into the ferrule according to type as indicated in the figures D= wire rope diameter.



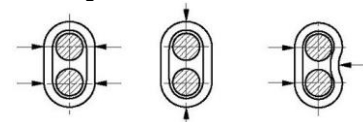
Before pressing conical ferrules with inspection hole, make sure that the short end of the wire rope is entered all the way to the back edge of the inspection hole!



If a thimble is not used, the distance from the unpressed ferrule to the bearing point of the soft eye must be at least 15 x the wire rope diameter (D), as per the figure. In some cases the sling eye should be even larger. Using a pin or a hook calculate 3 x pin diameter or the hook width to verify 15 x D or more.

The width of the eye without load shall be approximately half its length.

If the end of the wire rope is fixed in the ferrule before pressing then this should be done with care and preferably with controlled pressure, e.g. with our pre-pressing machines. Avoid faulty or unnecessary deformation of the ferrule. Do not clench or hammer in the middle of the long side of the ferrule. See figure.



CORRECT

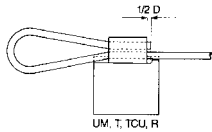
WRONG

Press dies:

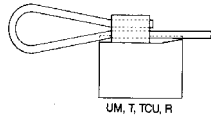
Check that the ferrule type and code number corresponds with the details stamped on the die. However our dies are not stamped with R and TCU-types; for these ferrule types use the type markings for T ferrules. Before pressing the dies should be carefully cleaned and the bore of the dies should be lightly lubricated. This will aid material flow and lengthen die life.

Positioning of the ferrule in the dies before pressing:

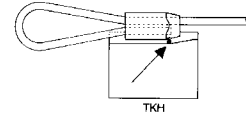
The following figures show how the ferrule should be positioned before pressing when using press dies with rounding or taper. In straight cylindrical dies the ferrule is placed in the middle of the cylindrical bore.



(Die with one-sided rounding)
Place the ferrule about half a wire rope diameter away from the die rounding.



(Conical die)
Place the ferrule centered in the straight cylindrical section of the die.

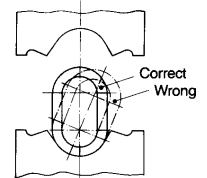


(Conical die)
Place the ferrule with the short wire rope end downwards and make sure the tap is in the inspection hole.

Pressing:

Make sure the dies are set up correctly and aligned. Lubricate the bore of the press dies. Press the ferrule, holding the wire rope with your two hands, one at each side of the dies. Attention! The closing dies imply a risk of crushing! The major axis of the oval ferrule cross-section must align with the direction of pressing. Use the regulating valve on the press to find the correct pressure in addition with an oil drop test*. On completion of the pressing operation the dies shall meet and pressing must stop! Do not overload the dies. The ferrule shall be pressed in one direction, without being turned. Fins or flash material shall be removed by a grinding method without damaging or reducing the round diameter of the ferrule. Any flash material shall not be pressed back into the ferrule.

* Oil drop test: place an oil drop on the supporting edge of the lower die. Use the regulating valve to close the dies. When the oil drop is pressed out of the closing dies the accurate pressure is achieved!



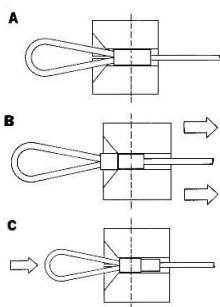
Multi bite pressing:

There are two types of dies for multi-bite pressing, a full length and a short type. **IMPORTANT!** Lubricate the bore of the press dies in every step!

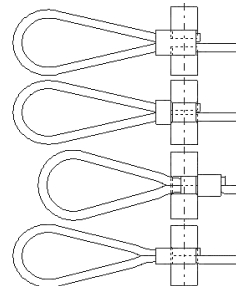
This procedure is for the full-length type. The press dies are first fixed in the swager as usual (Fig. A) using the centre fixing position, and pressing takes place as per standard procedure utilizing full pressure. The pressing is completed when the dies fully touch. If the press dies do not touch fully they must be moved to the second fixing position and pressing of half the ferrule carried out with reduced pressure as per Fig. B. NOTE! The pressure must be decreased to almost half not to overload the dies.

This method also ensures the load remains over the centre of the piston. The remaining half ferrule length is pressed as per Fig. C.

The procedure employing the short type dies involves moving the ferrule with the die remaining static in its fixed position see figure below. The pressure must be decreased to almost half the necessary pressure for full-length pressing.



A Lubricate. Ferrule in middle of the die.
B Lower the pressure. Move the die to its second fixing position. Lubricate. Press half the ferrule until the dies meet.
C Lubricate. Press the remaining ferrule half.



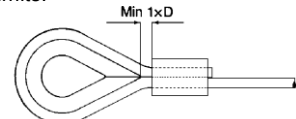
Lubricate. Place the ferrule as shown in the picture. Reduce the pressure to half the value compared to full length.
Press the ferrule just about half the required distance.
Lubricate. Now press the other side of the ferrule until the dies meet.
Lubricate. Press the first side of the ferrule once again, this time until the dies meet.

NOTE! For ferrules larger than size 60 there is a special method for multi bite pressing. This swaging instruction will be sent on request.

Checking and marking after pressing:

Check that the ferrule has been properly pressed and the wire rope is correct in alignment. Each ferrule shall be visually examined, free from flaws and defects. Any flash produced on the ferrules should be removed without damage to the ferrule or the rope. At each set-up the pressed ferrule shall be dimensionally checked to verify that it is within the diameter and when applicable length limits specified in the tables for ferrules. Each pressed ferrule after the set-up shall be checked for diameter to verify that it is within the diameter limits.

If a thimble is incorporated the point of the thimble should be at least 1 x D (the diameter of the wire rope) away from the ferrule after pressing. See figure. When using a thimble without a point the distance shall be 1,5 x D. Thimbles shall be according to EN 13411-1.



Make sure the dead end of the wire rope protrudes from the ferrule after pressing. Our recommendation is approx. 0,5 x D (the diameter of the wire rope), to exceed this can cause injury. In case of conical ferrule make sure the dead end is visible in the inspection hole. Marking of pressed ferrules should be carried out according to ruling standards. Use a steel stamp or our marking machines. The following maximum letter sizes and maximum depth of impression are valid:

For ferrule No.	Max. letter Size	Max. impression depth
8-24	3 mm	0,5 mm
24-110	5 mm	1,0 mm

Usage and scrapping:

Ferrule terminations of aluminium or copper shall not be exposed to temperatures outside the range -40°C to 100°C or to long-term submersion in seawater. Slings shall be taken out of use if their ferrules have been exposed to deformation or when the outer diameter has been reduced to less than 95% of the original diameter.

If you have wire ropes not covered by this instruction or have any technical questions, please contact our Technical Department for advice.

FERRULE SELECTION CHART ACCORDING TO EN 13411-3

Ferrule size / Code No.		Measured Wire Rope Diameter Range (mm)								Die Identification			Length after pressing approx.	Required pressure approx.
		Case 1 Fill factor $f \geq 0,36$		Case 2 Fill factor $f \leq 0,62$		Case 3 Fill factor $0,62 < f \leq 0,78$		Case 4 Fill factor $f \leq 0,78$		Dies marked	Diameter after pressing			
T	TKH	Min	Max	Min	Max	Min	Max	Min	Max		T/TKH	mm	Tol	mm
2,5		2,5	2,7							2,5	5	+0,2	12	30
3		2,8	3,2	2,5	2,7					3	6	0	14	45
3,5		3,3	3,7	2,8	3,2					3,5	7		16	60
4		3,8	4,3	3,3	3,7					4	8		18	80
4,5		4,4	4,8	3,8	4,3					4,5	9		20	100
5		4,9	5,4	4,4	4,8			3,8	4,3	5	10		23	125
6		5,5	6,4	4,9	5,4			4,4	4,8	6	12	+0,4	27	180
6,5		6,5	6,9	5,5	6,4			4,9	5,4	6,5	13	0	29	210
7		7,0	7,4	6,5	6,9	6,0	6,4	5,5	6,4	7	14		32	250
8	8	7,5	8,4	7,0	7,4	6,5	6,9	6,5	6,9	8	16		36	320
9	9	8,5	9,5	7,5	8,4	7,0	7,9	7,0	7,4	9	18		40	410
10	10	9,6	10,5	8,5	9,5	8,0	8,9	7,5	8,4	10	20	+0,5	45	500
11	11	10,6	11,6	9,6	10,5	9,0	9,9	8,5	9,5	11	22	0	50	600
12	12	11,7	12,6	10,6	11,6	10,0	10,9	9,6	10,5	12	24		54	720
13	13	12,7	13,7	11,7	12,6	11,0	11,9	10,6	11,6	13	26		59	850
14	14	13,8	14,7	12,7	13,7	12,0	12,9	11,7	12,6	14	28	+0,7	63	1 000
16	16	14,8	16,8	13,8	14,7	13,0	13,9	12,7	13,7	16	32	0	72	1 300
18	18	16,9	18,9	14,8	16,8	14,0	15,9	13,8	14,7	18	36	+0,9	81	1 600
20	20	19,0	21,0	16,9	18,9	16,0	17,9	14,8	16,8	20	40	0	90	2 000
22	22	21,1	23,1	19,0	21,0	18,0	19,9	16,9	18,9	22	44		99	2 400
24	24	23,2	25,2	21,1	23,1	20,0	21,9	19,0	21,0	24	48	+1,1	108	2 900
26	26	25,3	27,3	23,2	25,2	22,0	23,9	21,1	23,1	26	52	0	117	3 400
28	28	27,4	29,4	25,3	27,3	24,0	25,9	23,2	25,2	28	56		126	3 900
30	30	29,5	31,5	27,4	29,4	26,0	27,9	25,3	27,3	30	60	+1,4	135	4 500
32	32	31,6	33,6	29,5	31,5	28,0	29,9	27,4	29,4	32	64	0	144	5 100
34	34	33,7	35,7	31,6	33,6	30,0	31,9	29,5	31,5	34	68		153	5 800
36	36	35,8	37,8	33,7	35,7	32,0	33,9	31,6	33,6	36	72	+1,6	162	6 500
38	38	37,9	39,9	35,8	37,8	34,0	35,9	33,7	35,7	38	76	0	171	7 200
40	40	40,0	42,0	37,9	39,9	36,0	37,9	35,8	37,8	40	80		180	8 000
44	44	42,1	46,2	40,0	42,0	38,0	39,9	37,9	39,9	44	88	+1,9	198	9 700
48	48	46,3	50,4	42,1	46,2	40,0	43,9	40,0	43,9	48	96	0	216	11 500
52	52	50,5	54,6	46,3	50,4	44,0	47,9	44,0	47,9	52	104	+2,1 0	234	13 500
56	56	54,7	58,8	50,5	54,6	48,0	51,9	48,0	50,4	56	112	+2,3 0	252	15 700
60	60	58,9	63,0	54,7	58,8	52,0	54,6	50,5	54,6	60	120	+2,4 0	270	18 000

Table corresponds to EN 13411-3: 2004 + A1: 2008

FERRULE SELECTION CHART ACCORDING TO EN 13411-3

Explanations to page 1(2)



T ferrule (T)
(aluminium)



T Konit with inspection hole (TKH)
(aluminium)

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal metallic cross-sectional area factor of the rope $C = \frac{f \cdot \pi}{4}$

Matching wire rope to ferrule

Selection of the correct ferrule is to take account of:

- the measured rope diameter
- the rope type (and core)
- the nominal fill factor, f (or metallic cross-sectional area factor, C) of the rope

Case 1

For **single layer** round strand ropes with **fibre core and cable-laid** ropes having a fill factor of at least 0,36, a ferrule having a size / Code number equivalent to the measured rope diameter is to be selected from the table on page 1.

Case 2

For **single layer** round strand ropes with **metallic core and for rotation-resistant** round strand ropes having a fill factor up to 0,62, a ferrule having the next larger size / Code number than the measured rope diameter is to be selected from table on page 1.

Case 3

For **single layer** round strand ropes with **metallic core and for rotation-resistant** round strand ropes and parallel-closed round strand ropes having a fill factor greater than 0,62 and up to 0,78 the ferrule is to be selected from table on page 1.

Case 4

For **spiral strand** rope having a fill factor not greater than 0,78, ferrules are to be selected having two size / Code numbers larger than the actual rope diameter from table on page 1. Two ferrules spaced two rope diameters apart are to be used per termination. After pressing a space is to be maintained between the ferrules.

Applicable rope types and grade

Single layer, rotation resistant and parallel-closed stranded ropes conforming to EN 12385-4, stranded ropes conforming to EN 12385-5, spiral strand ropes conforming to EN 12385-10 and cable-laid ropes as specified in EN 13414-3.

The maximum rope grade is to be 1960. The types of rope lay shall be Ordinary or Lang lay.

TALURIT™ SPLICING SYSTEM

Selection chart for T-LOC ferrules

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



T-LOC ferrule, Steel reinforcement used together with a T ferrule

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal metallic cross-sectional area factor of the rope.

$$C = \frac{f \cdot \pi}{4}$$

T-LOC No.	Measured wire rope (grade 2160) (mm)	
	35(W) x 7 Fill factor: $0,74 \leq f \leq 0,75$	
	Min	Max
10	8,0	9,0
11	9,0	9,9
12	10,0	10,9
13	11,0	11,9
14	12,0	12,9
16	13,0	13,9
18	14,0	15,9
20	16,0	17,9
22	18,0	19,9
24	20,0	21,9
26	22,0	23,9
28	24,0	25,9
30	26,0	27,9
32	28,0	29,9
34	30,0	31,9
36	32,0	33,9
38	34,0	35,9
40	36,0	37,9
44	38,0	39,9
48	40,0	43,9
52	44,0	47,9
56	48,0	51,9
60	52,0	54,6

T-LOC ferrules: The T-LOC system is tested and validated according to EN 13411-3. The tested constructions are 34(W) x K7 and 39(W) x K7-WSC, fill factor: 0.74-0.75. Selection of the correct ferrule is to take account of:

- 1) the measured rope diameter
- 2) the rope type (and core) and
- 3) the nominal fill factor, f (or metallic cross-sectional area factor, C) of the rope.

Wire Rope: Applicable wire rope is rotation resistant wire ropes in class 35(W) x 7 as specified in EN 12385-4. The maximum rope grade is to be 2160. The types of rope lay shall be Ordinary or Lang lay.

Swaging: See separate swaging instructions for T-LOC on the following page.

Note! Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

T-LOC SPLICING SYSTEM

Swaging instructions

Matching wire rope to ferrule

Selection of the correct ferrule is to take account of:

- 1) the measured rope diameter
- 2) the rope type (and core) and
- 3) the nominal fill factor, f (or metallic cross-sectional area factor, C) of the rope.

Applicable rope types and grade

Rotation resistant wire ropes in class 35(W) x 7 as specified in EN 12385-4.

The maximum rope grade is to be 2160. The types of rope lay shall be Ordinary or Lang lay.

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal metallic cross-sectional area factor of the rope $C = \frac{f \cdot \pi}{4}$

Assembly (T-LOC is marked black)



Thread ferrule and T-LOC on wire rope.



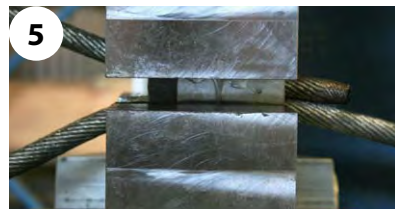
Make the eye.



Incorporate thimble, if used. Further adjustment while swaging.



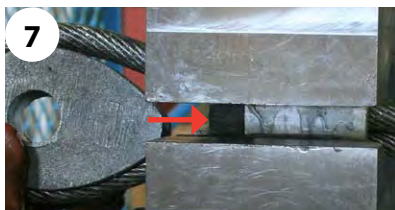
Mount in lubricated dies. T-LOC must be positioned next to T ferrule.



Use the swager's hold position and swage until T-LOC and ferrule are clamped. STOP.



Measure. Distance T-LOC and solid thimble before swaging must be at least 2 times the nominal diameter. For pointed thimbles the distance can be reduced.



Make sure that T-LOC remains next to the T ferrule.



Swage T-LOC and ferrule (or first part of the ferrule, if the assembly is too long for the dies). Close dies.

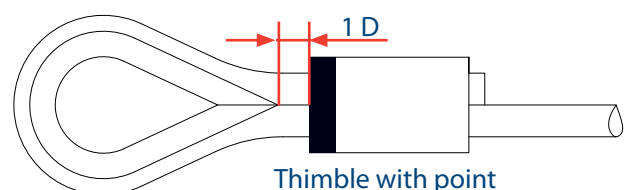


If a second swaging is required, open dies and swage the second part of the ferrule. Close dies.

Minimum distance between thimble and T-LOC after swaging



Thimble with no point



Thimble with point

TALURIT™ SPLICING SYSTEM

Selection table for T, TK and TKH ferrules

Ferrule No.			Wire rope Capacity Diameter (mm)				Die identification				
			Fill factor (f=0,40-0,50) Fibre Core		Fill factor (f=0,50-0,60) Steel Core		Dies marked	Diameter after pressing		Length after pressing approx.	Required pressure approx.
T	TK	TKH	Min	Max	Min	Max	T/TK/TKH	mm / Tol		mm	kN
1			0,9	1,1	0,8	1,0	1	3	+0,1	6,5	5
1,5			1,2	1,6	1,1	1,4	1,5	3,8	0	8	10
2			1,7	2,1	1,5	1,9	2	4	+0,15	9	20
2,5			2,2	2,6	2,0	2,4	2,5	5	0	12	30
3			2,7	3,2	2,5	2,9	3	6		14	45
3,5			3,3	3,7	3,0	3,4	3,5	7		16	60
4			3,8	4,2	3,5	3,8	4	8		18	80
4,5			4,3	4,7	3,9	4,3	4,5	9		20	100
5			4,8	5,3	4,4	4,8	5	10		23	125
6			5,4	6,3	4,9	5,8	6	12	+0,3	27	180
6,5			6,4	6,8	5,9	6,2	6,5	13	0	29	210
7			6,9	7,4	6,3	6,7	7	14		32	250
8	8	8	7,5	8,4	6,8	7,7	8	16		36	320
9	9	9	8,5	9,5	7,8	8,6	9	18		40	410
10	10	10	9,6	10,5	8,7	9,6	10	20	+0,4	45	500
11	11	11	10,6	11,6	9,7	10,5	11	22	0	50	600
12	12	12	11,7	12,6	10,6	11,5	12	24		54	720
13	13	13	12,7	13,7	11,6	12,5	13	26		59	850
14	14	14	13,8	14,7	12,6	13,4	14	28	+0,5	63	1 000
16	16	16	14,8	16,8	13,5	15,3	16	32	0	72	1 300
18	18	18	16,9	18,9	15,4	17,3	18	36	+0,6	81	1 600
20	20	20	19,0	21,0	17,4	19,2	20	40	0	90	2 000
22	22	22	21,1	23,1	19,3	21,1	22	44		99	2 400
24	24	24	23,2	25,2	21,2	23,0	24	48	+0,8	108	2 900
26	26	26	25,3	27,3	23,1	24,9	26	52	0	117	3 400
28	28	28	27,4	29,4	25,0	26,8	28	56		126	3 900
30	30	30	29,5	31,5	26,9	28,8	30	60	+1,0	135	4 500
32	32	32	31,6	33,6	28,9	30,7	32	64	0	144	5 100
34	34	34	33,7	35,7	30,8	32,6	34	68		153	5 800
36	36	36	35,8	37,8	32,7	34,5	36	72	+1,1	162	6 500
38	38	38	37,9	39,9	34,6	36,4	38	76	0	171	7 200
40	40	40	40,0	42,0	36,5	38,3	40	80		180	8 000
42	42	42	42,1	44,1	38,4	40,3	42	84	+1,3	191	8 800
44	44	44	44,2	46,2	40,4	42,2	44	88	0	198	9 700
46	46	46	46,3	48,3	42,3	44,1	46	92		209	10 600
48	48	48	48,0	50,4	44,0	46,2	48	96		216	11 500
50	50	50	48,4	52,5	44,2	47,9	50	100	+1,6	228	12 500
52	52	52	52,0	54,6	46,3	47,9	52	104	0	234	13 500
54	54	54	52,6	56,7	48,0	51,7	54	108		246	14 600
56	56	56	56,0	58,8	50,5	51,9	56	112	+1,7	252	15 700
58	58	58	56,8	60,9	51,8	55,6	58	116	0	264	16 800
60	60	60	60,6	63,0	54,7	55,9	60	120		270	18 000

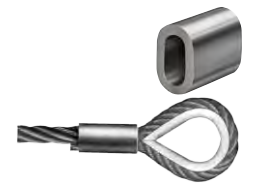
See page 2 for larger T ferrules!

Ferrules: T and TKH have been validated according to EN 13411-3 regarding Ferrule Secured Eye terminations and Ferrule Secured Endless slings. TK-ferrules have been validated according to TALURIT™ splicing system.

Wire rope: Above table applies to bright or galvanized single layer steel wire ropes with round strands and rope grade 1 570 – 1 960. Wire ropes shall conform to EN 12385-4 and 5. The types of rope shall be Ordinary or Lang lay. For higher tensile grade we have an approved system called T-LOC. For higher and lower filling factor, please contact our Technical Department.

Swaging: The T ferrules up to size 60 are swaged according to our specified swaging method for turnback ferrules.

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



T ferrule (T)
(aluminium)



TKonit (TK)
(aluminium)



TKonit H (TKH)
(aluminium)

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal metallic cross-sectional area factor of the rope.

$$C = \frac{f \cdot \pi}{4}$$

Rev. 2014-09-06

TALURIT™ SPLICING SYSTEM

Selection table for larger T ferrules

Ferrule No.	Wire rope Capacity Diameter (mm)				Die identification			Length after pressing approx. mm	Required pressure approx. kN
	Fill factor (f=0,40-0,50) Fibre Core		Fill factor (f=0,50-0,60) Steel Core		Dies marked	Diameter after pressing			
T	Min	Max	Min	Max	T	mm / Tol			
62*	61,0	65,1	55,7	59,4	62	124	+1,8	282	19 200
66	65,2	69,3	59,5	63,2	66	132	0	300	22 000
70	69,4	73,5	63,3	67,1	70	140	+2,0 0	319	24 500
74*	73,6	77,7	67,2	70,9	74	148		337	27 000
78*	77,8	81,9	71,0	74,7	78	156		355	30 000
82*	82,0	86,1	74,8	78,6	82	164	+2,2 0	373	34 000
86	85,1	90,3	77,7	82,4	86	172		391	37 000
94	93,7	98,7	82,5	88,8	94 DAP 188	188		424	46 000
94	-	-	88,9	95,1	94 DAP 190	190		434	46 000
102	-	-	95,2	101,5	102 DAP 212	212	+2,5 0	464	55 000
102	-	-	101,6	106,8	102 DAP 214	214		475	55 000
116	-	-	106,9	114,0	116 DAP 232	232		529	67 000
116	-	-	114,1	120,0	116 DAP 235	235		541	67 000
128	-	-	120,1	126,0	128 DAP 257	257		583	80 000
128	-	-	127,0	133,5	128 DAP 260	260		597	80 000
152*	-	-	139,5	147,0	152 DAP 302	302		690	115 000
152*	-	-	152,0	160,0	152 DAP 308	308		706	115 000

* Available on request.

T ferrules: T ferrules above size 60 have been tested and validated according to TALURIT™ splicing system requirements. For more information, please contact our technical department.

Wire rope: Above table applies to bright or galvanized single layer steel wire ropes with round strands and rope grade 1 570 – 1 960. Wire ropes shall conform to EN 12385-4 and 5. The types of rope shall be Ordinary or Lang lay. For higher tensile grade, we have a system called T-LOC. For higher and lower filling factor, please contact our Technical Department. Note! Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

Swaging: IMPORTANT! For T ferrules larger than size 60 there is a special method for multi-stage swaging! Always swage according to accurate instructions! When swaging an assembly with a thimble, we recommend a larger distance between the ferrule and the top of the thimble, than specified in the standard.

Note! Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



T ferrule (T)
(aluminium)

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

$$C = \frac{f \cdot \pi}{4}$$

C = Nominal metallic cross-sectional area factor of the rope



IMPORTANT!

For ferrules larger than size 60 there is a special method for multi-stage swaging! Always swage according to accurate instructions!

TALURIT™ SPLICING SYSTEM

Selection table for UM and K ferrules

Ferrule No.		Wire Rope Capacity Diameter (mm)				Die Identification		Length after pressing approx.		Required pressure approx.
		Fill factor (f=0,40-0,50) Fibre Core		Fill factor (f=0,50-0,60) Steel Core		Dies marked	Diameter after pressing			
UM	K	Min	Max	Min	Max	UM, K	(mm) / Tol	mm	(kN)	
9	9	8,3	9,0	7,6	8,2	9	16	+0,3 0	36	410
10	10	9,1	10,1	8,3	9,2	10	18		41	500
11	11	10,2	11,2	9,3	10,2	11	20	+0,4 0	45	600
12	12	11,3	12,3	10,3	11,2	12	22		50	720
13	13	12,4	13,4	11,3	12,2	13	24		55	850
14	14	13,5	14,5	12,3	13,2	14	26		59	1 000
16	16	14,6	16,1	13,3	14,7	16	28	+0,5 0	64	1 300
18	18	16,2	18,2	14,8	16,6	18	32		73	1 600
20	20	18,3	20,2	16,7	18,4	20	36	+0,6 0	82	2 000
22	22	20,3	22,4	18,5	20,4	22	40		91	2 400
24	24	22,5	24,6	20,5	22,5	24	44		100	2 900
26	26	24,7	26,9	22,6	24,6	26	48	+0,8 0	109	3 400
28	28	27,0	28,6	24,7	26,1	28	52		118	3 900
30	30	28,7	30,8	26,2	28,1	30	56		127	4 500
32	32	30,9	32,7	28,2	29,9	32	60	+1,0 0	136	5 100
34	34	32,8	34,9	30,0	31,9	34	64		146	5 800
36	36	35,0	37,1	32,0	33,8	36	68		155	6 500
38	38	37,2	39,2	33,9	35,7	38	72	+1,1 0	164	7 200
40	40	39,3	41,4	35,8	37,8	40	76		173	8 000
42	42	41,5	43,6	37,9	39,8	42	80		182	8 800
44	44	43,7	45,7	39,9	41,7	44	84	+1,3 0	191	9 700
46	46	45,8	48,0	41,8	43,8	46	88		200	10 600
50	50	48,1	50,6	43,9	46,2	50	92		209	12 500
54		50,7	55,0	46,3	50,2	54	100	+1,6 0	228	14 600
58		55,1	59,4	50,3	54,2	58	108		246	16 800
62		59,5	63,8	54,3	58,2	62	116	+1,7 0	264	19 200
66		63,9	67,6	58,3	61,7	66	124	+1,8 0	282	22 000
70		67,7	71,9	61,8	65,6	70	132		300	24 500
74		72,0	76,3	65,7	69,7	74	140	+2,0 0	319	27 000
78		76,4	80,7	69,8	73,6	78	148		337	30 000
82		80,8	85,0	73,7	77,6	82	156		355	34 000
90		89,5	93,7	81,7	85,5	90	172		+2,2 0	391

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



Ultragrip (UM)
(aluminium)



Konit™ (K)
(aluminium)

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal Metallic cross-sectional area factor of the rope.

$$C = \frac{f \cdot \pi}{4}$$

UM ferrules : The UM ferrules have been validated according to EN 13411-3 regarding Ferrule Secured Eye terminations and Ferrule Secured Endless slings.

K ferrules: The K ferrules have been validated according to TALURIT™ splicing system requirements.

Wire rope: The table applies to bright or galvanized single layer steel wire ropes with round strands. Maximum rope grade is 1960. For Fibre core wire ropes larger than 60 mm the maximum rope grade is 1770. Wire ropes shall conform to EN 12385-4 and 5. The types of rope shall be Ordinary or Lang lay. For higher tensile grade and higher Fill factor, please contact our Technical Department.

Swaging: The UM ferrules and the K ferrules are swaged according to our specified swaging method for turnback ferrules.

Note! Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

Rev. 2009-01-29

TALURIT™ SPLICING SYSTEM

Selection table for TS ferrules

Ferrule No.	Wire Rope Capacity Diameter (mm)				Die Identification		Length after pressing approx.	Required pressure approx.	
	Fill factor (f=0,40-0,50) Fibre Core		Fill factor (f=0,50-0,60) Steel Core		Dies marked	Diameter after pressing (mm) / Tol.			
TS	Min	Max	Min	Max	T			mm	(kN)
8	7,5	8,4	6,8	7,7	8	16	+0,3	31	320
9	8,5	9,5	7,8	8,6	9	18	0	35	410
10	9,6	10,5	8,7	9,6	10	20	+0,4	39	500
11	10,6	11,6	9,7	10,5	11	22	0	43	600
12	11,7	12,6	10,6	11,5	12	24		47	720
13	12,7	13,7	11,6	12,5	13	26		51	850
14	13,8	14,7	12,6	13,4	14	28	+0,5	55	1 000
16	14,8	16,8	13,5	15,3	16	32	0	62	1 300
18	16,9	18,9	15,4	17,3	18	36	+0,6	70	1 600
20	19,0	21,0	17,4	19,2	20	40	0	78	2 000
22	21,1	23,1	19,3	21,1	22	44		86	2 400
24	23,2	25,2	21,2	23,0	24	48	+0,8	94	2 900
26	25,3	27,3	23,1	24,9	26	52	0	101	3 400
28	27,4	29,4	25,0	26,8	28	56		109	3 900
30	29,5	31,5	26,9	28,8	30	60	+1,0	117	4 500
32	31,6	33,6	28,9	30,7	32	64	0	125	5 100
34	33,7	35,7	30,8	32,6	34	68		133	5 800
36	35,8	37,8	32,7	34,5	36	72	+1,1	140	6 500
38	37,9	39,9	34,6	36,4	38	76	0	148	7 200
40	40,0	42,0	36,5	38,3	40	80		156	8 000
42	42,1	44,1	38,4	40,3	42	84	+1,3	164	8 800
44	44,2	46,2	40,4	42,2	44	88	0	172	9 700
46	46,3	48,3	42,3	44,1	46	92		179	10 600
48	48,0	50,4	44,0	46,2	48	96		187	11 500
50	48,4	52,5	44,2	47,9	50	100	+1,6	195	12 500
52	52,0	54,6	46,3	47,9	52	104	0	203	13 500
54	52,6	56,7	48,0	51,7	54	108		211	14 600
56	56,0	58,8	50,5	51,9	56	112	+1,7	218	15 700
58	56,8	60,9	51,8	55,6	58	116	0	226	16 800
60	60,6	63,0	54,7	55,9	60	120		234	18 000

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



TS ferrule (TS)
Short aluminium ferrule

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal metallic cross-sectional area factor of the rope.

$$C = \frac{f \cdot \pi}{4}$$

TS ferrules: The TS ferrules have been validated according to TALURIT™ splicing system requirements. Since it is shorter than ordinary T-ferrule, it only fulfills the requirements in the European standard EN 13411-3 up to grade 1 770.

Wire rope: Above table applies to bright or galvanized steel wire ropes with round strands and rope grade 1 570 – 1 770. Wire ropes shall conform to EN 12385-4 and 5. The types of rope shall be Ordinary or Lang lay.

Swaging: The TS ferrules are swaged according to our specified swaging method for turnback ferrules.

Note! Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

TALURIT™ SPLICING SYSTEM

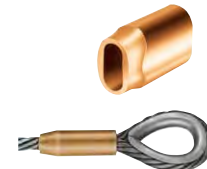
Selection table for TCU and TCUK ferrules

Ferrule No.		Wire Rope Capacity Diameter (mm)				Die Identification			Required pressure approx. (kN)
		Fill factor (f=0,40-0,50) Fibre Core		Fill factor (f=0,50-0,60) Steel Core		Dies marked T	Diameter after pressing (mm) / Tol.		
TCU	TCUK	Min	Max	Min	Max				
1		0,9	1,0	0,8	0,9	1	3	+0,1	10
1.5		1,1	1,5	1,0	1,4	1,5	3,8	0	20
2		1,6	2,0	1,5	1,9	2	4	+0,1	30
2.5		2,1	2,6	2,0	2,4	2,5	5	0	45
3		2,7	3,1	2,5	2,8	3	6		60
3.5		3,2	3,6	2,9	3,3	3,5	7		80
4		3,7	4,1	3,4	3,8	4	8		100
4.5		4,2	4,6	3,9	4,2	4,5	9		125
5		4,7	5,1	4,3	4,7	5	10		180
6		5,2	6,1	4,8	5,6	6	12	+0,3	210
6.5		6,2	6,6	5,7	6,1	6,5	13	0	250
7		6,7	7,1	6,2	6,6	7	14		320
8	8	7,2	8,2	6,7	7,5	8	16		410
9	9	8,3	9,0	7,6	8,2	9	18		500
10	10	9,1	10,1	8,3	9,2	10	20	+0,4	600
11	11	10,2	11,2	9,3	10,2	11	22	0	720
12	12	11,3	12,3	10,3	11,2	12	24		850
13	13	12,4	13,4	11,3	12,2	13	26		1 000
14	14	13,5	14,5	12,3	13,2	14	28	+0,5	1 300
16	16	14,6	16,1	13,3	14,7	16	32	0	1 600
18	18	16,2	18,2	14,8	16,6	18	36	+0,6	2 000
20	20	18,3	20,2	16,7	18,4	20	40	0	2 400
22	22	20,3	22,4	18,5	20,4	22	44		2 900
24	24	22,5	24,6	20,5	22,5	24	48	+0,8	3 400
		24,7	26,9	22,6	24,6	26	52	0	3 900
28		27,0	28,6	24,7	26,1	28	56		4 500
30		28,7	30,8	26,2	28,1	30	60	+1,0	5 100
		30,9	32,7	28,2	29,9	32	64	0	5 800

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



Copper ferrule (TCU)
(copper)



Copper ferrule (TCUK)
(copper)

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal metallic cross-sectional area factor of the rope.

$$C = \frac{f \cdot \pi}{4}$$

TCU and TCUK ferrules:

The TCU and TCUK ferrules have been validated according to TALURIT™ splicing system, which is within the frames of EN 13411-3. Copper as material is not accepted in this standard. We do not guarantee strength of slings for lifting activities made of Copper turnback ferrules. A termination performed according to our instructions will normally withstand a tensile strength of 90% of minimum breaking load (MBL) of the wire rope. Verifying tests must be done in order to find out the strength.

Wire rope:

Above table applies to stainless steel wire ropes as well as bright or galvanized wire ropes. It applies to single layer wire ropes with round strands and rope grade 1 570-1 960. Wire ropes shall conform to EN 12385-4 and -5. The types of rope shall be Ordinary or Lang lay. For higher tensile grade and higher Fill factor, please contact our Technical Department. Note! Stainless steel as a material is not included in the EN standard for wire ropes.

Swaging:

The TCU and TCUK ferrules are swaged according to our specified swaging method for turnback ferrules.

Note!

Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

TALURIT™ SPLICING SYSTEM

Selection table for carbon steel ferrules ST and SLST

	Ferrule No.	Wire Rope Capacity Diameter (mm)				Die Identification		Required pressure approx. (kN)	
		Fill factor (f=0,45-0,52) Fibre Core		Fill factor (f=0,58-0,60) Steel Core		Dies marked	Diameter after pressing (mm) / Tol.		
		Min	Max	Min	Max				
ST	17	16,0	16,8	15,5	16,3	ST 16	28,7	+0,5 0	1 700
	17	16,8	18,3	16,3	17,8	ST 17	29,5		1 700
	19	18,3	19,3	17,8	18,7	ST 18	32,4	+0,6 0	2 000
	19	19,3	20,2	18,7	19,6	ST 19	33,3		2 000
	21	20,2	20,9	19,6	20,3	ST 20	34,7		2 300
	21	20,9	21,8	20,3	21,1	ST 21	35,2		2 300
SLST	23	—*	—*	21,1	23,2	SLST 22	39,0	+0,8 0	2 700
	23	—	—	22,5	24,3	SLST 23	40,0		2 700
	25	—	—	23,6	24,5	SLST 24	42,7		3 100
	25	—	—	24,5	25,5	SLST 25	43,3		3 100
	27	—	—	25,5	27,5	SLST 26	45,9		3 500
	27	—	—	26,7	28,5	SLST 27	46,6		3 500
	29	—	—	27,9	28,8	SLST 28	49,0	+1,0 0	4 300
	29	—	—	28,9	29,8	SLST 29	50,0		4 300
	31	—	—	29,9	30,8	SLST 30	53,0		4 900
	31	—	—	30,9	31,8	SLST 31	54,0	4 900	
	33	—	—	31,9	32,8	SLST 32	55,2	5 500	
	33	—	—	32,9	33,8	SLST 33	56,0	5 500	
	35	—	—	33,9	34,8	SLST 34	58,5	6 500 ²⁾	
	35	—	—	34,9	35,8	SLST 35	59,5	6 500 ²⁾	
	39	—	—	37,9	38,8	SLST 38	65,0	7 500 ²⁾	
39	—	—	38,9	39,9	SLST 39	66,0	7 500 ²⁾		

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



ST, SLST

ST and SLST ferrules have been validated according to EN 13411-3 regarding Turnback Eye Ferrule Secured Termination.



ST and SLST Ferrule (carbon steel)

* Not applicable

¹⁾ Special request only

²⁾ According to the table, 6 500 kN is required to swage for instance ferrule no. 35. By using a multi stage swaging method a 600-ton swager is sufficient for larger ferrules. See page 2 for instructions on how to perform multi stage swaging.

ST and SLST Ferrules:

The ST and SLST ferrules have been validated according to the requirements in the standard EN 13411-3 regarding ferrule secured eye terminations.

Wire Rope:

These carbon steel ferrules applies to single layer round strand ropes with metallic core. Wire ropes shall conform to EN 12385 -4 and 5, class 6 x 36, maximum rope grade is to be 1960, fill factor 0,58-0,60. For other classes, rope grades and fill factor verifying test must be performed. Steel wire rope with a fiber core has not been tested. Contact our Technical Department for more advice.

Swaging:

The ST and SLST ferrules are swaged according to specific instructions for ST, SLST and STS ferrules on the page following the STS selection table.

Note!

Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

$$C = \frac{f \cdot \pi}{4}$$

C = Nominal metallic cross-sectional area factor of the rope

TALURIT™ SPLICING SYSTEM

Selection table for carbon steel ferrules STS

Ferrule No.	Wire Rope Capacity Diameter (mm)				Die Identification		Required pressure approx. (kN)	
	Fill factor (f=0,45-0,52) Fibre Core		Fill factor (f=0,58-0,60) Steel Core		Dies marked STS	Diameter after pressing (mm) / Tol.		
	Min	Max	Min	Max				
5	4,3	5,2	4,0	4,9	STS 5	10,0	+0,15 0	200
6	5,3	6,2	5,0	5,9	STS 6	12,3	±0,3	300
7	6,3	7,2	6,0	6,9	STS 7	14,0	+0,3 0	400
8	7,3	8,2	7,0	7,9	STS 8	16,4	±0,4	500
9	8,3	9,2	8,0	8,8	STS 9	18,4		600
10	9,3	10,2	8,9	9,8	STS 10	20,4		750
11 ¹⁾	10,3	11,2	9,9	10,9	STS 11 ¹⁾	22,0	+0,4 0	900
12	11,3	12,2	11,0	11,8	STS 12	24,0		1 100
13 ¹⁾	12,3	13,2	11,9	12,8	STS 13 ¹⁾	26,0		1 250
14	13,3	14,2	12,9	13,8	STS 14	28,0	+0,5 0	1 450
16	14,3	16,2	13,9	15,7	STS 16	32,0		1 900
17	-	-	15,7	17,9	STS 17	35,7		1 800
18	-	-	18	19,9	STS 18	37,8		2 100
20	-	-	20	21,9	STS 20	42,9		2 500
22	-	-	22	23,9	STS 22	47,6	+0,6 0	3 000
24	-	-	24	26,7	STS 24	52,0	+0,8 0	3 700
28	-	-	26,8	29,9	STS 28	60,0		4 600
30	-	-	30	31,9	STS 30	64,0		5 500
34	-	-	32	35,9	STS 34	72		6 500
38	-	-	36,0	39,9	STS 38	80,0		+1,3 0
42	-	-	40,0	41,9	STS 40	86,0	10 000	
42	-	-	42,0	43,9	STS 42	87,0	11 000	
44	-	-	44,0	45,9	STS 44	95,0	13 500	
48	-	-	46,0	47,9	STS 46	103,8	16 000	
48	-	-	48,0	50,7	STS 48	105,6	18 000	
52	-	-	50,8	54,6	STS 52	109,7	20 000	
56	-	-	54,7	58,8	STS 56	119,7	24 000	
60	-	-	58,9	63,0	STS 60	124,2	27 000	
64	-	-	63,1	67,2	STS 64	134,5	29 000	
68	-	-	67,3	70,9	STS 68	140,0	+1,6 0	32 000
72	-	-	71,0	75,9	STS 72	152,5		35 000
76	-	-	76,0	79,9	STS 76	162,3		
80	-	-	80,0	85,9	STS 80	173,0		

IMPORTANT! Measure the wire rope and use the actual, not the nominal, diameter to find corresponding ferrule in this table!



STS ferrules from size 17 are galvanized for better corrosion protection.

STS ferrules have been validated according to EN 13411-3 regarding Turnback Eye Ferrule Secured Termination.

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

$$C = \frac{f \cdot \pi}{4}$$

C = Nominal metallic cross-sectional area factor of the rope

STS Ferrules: The STS ferrules have been validated according to the requirements in the standard EN 13411-3 regarding ferrule secured eye terminations. The STS ferrules between size 5-16 differ in material and surface treatment compared to the larger sizes, but the entire STS system fulfills the requirements according to the standard.

Wire Rope: These carbon steel ferrules applies to single layer round strand ropes with metallic core. Wire ropes shall conform to EN 12385 -4 and 5, class 6 x 36, maximum rope grade is to be 1960, fill factor 0,58-0,60. For other classes, rope grades and fill factor verifying test must be performed. Steel wire rope with a fiber core has not been tested. Contact our Technical Department for more advice.

Swaging: The STS ferrules are swaged according to specific instructions for ST, SLST and STS ferrules on the following page.

Note! Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

Swaging ST, SLST and STS Ferrules

The ferrule is swaged in one swaging operation according to Talurit Ferrule Securing Instruction for turnback ferrules. If you can't achieve the required pressure in your swager, it is possible to use the multi stage swaging procedure below. This method only requires approximately half of the required pressure to achieve the same end result.



NOTE! Do not rotate the ferrule during this procedure or swage the flash material afterwards. The flash material has to be ground or filed away.

Multi stage swaging with short several stage dies (if necessary)



Important! Lubricate the bore of the dies in every step.

1. Assemble the rope and ferrule and position it so that approx. half the ferrule is inside the dies.
2. Start pressing and continue until approx. half the distance of the ferrule is swaged.
3. Move the unpressed part of the ferrule inside the dies and press until the dies meet each other.



NOTE! Do not overload the dies by using too much pressure! Seek the correct pressure with the pressure regulating valve. This method only requires approximately half of the required pressure.

4. Move the half-pressed part of the ferrule inside the dies and press until the dies meet each other.
5. Position the ferrule so that the centre of the ferrule is in the middle of the dies and press until the dies meet each other.

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TALURIT™ SPLICING SYSTEM

Selection table for INOX ferrules

Ferrule No.	Wire Rope Capacity Diameter (mm)				Die Identification			Required pressure approx. (kN)
	Fill factor (f=0,42-0,52) Fibre Core		Fill factor (f=0,53-0,58) Steel Core		Dies marked	Diameter after pressing (mm) / Tol.		
INOX	Min	Max	Min	Max	INOX			
1	0,9	1,1	0,8	1,0	1	3,4	+0,1 0	70
1,5	1,2	1,6	1,1	1,4	1,5	3,9	+0,15 0	100
2	1,7	2,2	1,5	2,0	2	4,5		160
2,5	2,3	2,7	2,1	2,6	2,5	5		200
3	2,8	3,2	2,7	3,0	3	6		250
3,5	3,3	3,7	3,1	3,5	3,5	7,8		300
4	3,8	4,2	3,6	4,0	4	8		350
4,5	4,3	4,7	4,1	4,5	4,5	9,8	400	
5	4,8	5,4	4,6	5,0	5	10,8	+0,3 0	500
6	5,5	6,4	5,1	6,1	6	12,3	±0,3	600
7	6,5	7,4	6,2	7,1	7	14	+0,3 0	700
8	7,5	8,4	7,2	8,1	8	16,4	±0,4	850
9	8,5	9,5	8,2	9,1	9	18,4		1 000
10	9,6	10,5	9,2	10,1	10	20,4		1 100
11	10,6	11,5	10,2	11,1	11	21,5		1 350
12	11,6	12,6	11,2	12,2	12	24	+0,4 0	1 500
13	12,7	13,6	12,3	13,2	13	26	0	1 750
14	13,7	14,6	13,3	14,2	14	28	+0,5 0	2 000
16	14,7	16,7	14,3	16,2	16	32	0	2 500
18	16,8	19,0	16,3	18,2	18	36	+0,6 0	3 100
20	19,1	21,0	18,3	20,2	20	40	0	3 400
22	21,1	23,1	20,3	22,2	22	44	0	3 900
24	23,2	25,2	22,3	24,2	24	48	+0,8 0	4 500
26	25,3	27,3	24,3	26,4	26	52		5 000
28	27,4	29,4	26,5	28,4	28	56		5 600
30	29,5	31,5	28,5	30,3	30	60		6 000

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



INOX ferrule
(Stainless steel)

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal metallic cross-sectional area factor of the rope.

$$C = \frac{f \cdot \pi}{4}$$

INOX ferrules: The INOX ferrules have been validated according to TALURIT™ splicing system.

Wire rope: Above table applies to stainless steel single layer wire ropes with round strands and rope grade 1570. For higher tensile grade and higher Fill factor, please contact our Technical Department.

Swaging: The INOX ferrules are swaged according to our specified swaging method for turnback ferrules.

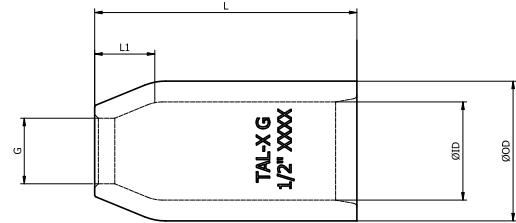
Note! We do not guarantee strength of slings for lifting activities made of INOX-ferrules. A termination performed according to our instructions will normally withstand a tensile strength of 90% of the minimum-breaking load (MBL) of the wire rope. Verifying tests must be done in order to find out the strength. Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

TALURIT™ SPLICING SYSTEM

DIMENSIONS FOR TAL-X AND TAL-X G FLEMISH EYE SLEEVES

METRIC DIMENSIONS

Sleeve Size (inch)	Dimensions before swaging (mm)					Weight each ap- prox. (kg)
	L	OD	ID	L1	G	
TAL-X TAL-X G	L	OD	ID	L1	G	
1/4	25.4	16.8	11.9	7.12	7.88	0.04
5/16	38.1	23.1	15.8	11.2	11.2	0.04
3/8	38.1	23.1	16.8	9.91	11.9	0.05
7/16	51.0	31.0	21.6	16.5	14.0	0.13
1/2	51.0	31.0	23.1	14.2	16.0	0.13
9/16	70.0	37.3	26.2	16.0	17.5	0.31
5/8	70.0	37.3	27.7	16.0	19.1	0.26
3/4	81.0	43.7	32.5	21.3	23.1	0.40
7/8	90.5	51.5	38.9	25.4	26.2	0.62
1	102	58.0	43.7	28.6	29.5	0.89
1 1/8	122	63.5	49.3	31.8	32.5	1.18
1 1/4	132	70.5	55.0	35.8	36.5	1.54
1 3/8	148	76.0	60.5	39.7	39.7	1.95
1 1/2	159	82.5	67.0	42.9	42.9	2.26
1 3/4	184	97.5	79.5	50.0	49.2	3.67
2	216	111	92.0	57.0	57.0	5.10
2 1/4	243	128	102	64.5	63.5	8.62
2 1/2	267	140	114	71.5	70.0	10.43
2 3/4	292	146	121	78.5	76.0	12.70
3	305	152	127	86.0	82.5	13.34
3 1/4	330	165	138	90	98	16,30
3 1/2	356	178	148	100	98.5	21.05
3 3/4	381	191	160	108	103	24.95
4	406	206	173	114	111	31.30
4 1/2	457	232	195	129	124	45.36
5	508	267	222	143	138	65.86
6	610	319	259	172	165	122.74



TAL-X sleeves, black oxidized

TAL-X G sleeves, galvanized

NOTE!

Due to the variety of steel wire ropes, it is difficult to approve all of them. Verification tests must be performed in order to confirm the strength of application. Contact our Technical Department for more advice.

Dies are marked: TAL-X and size

TAL-X and TAL-X G sleeves:

Wire rope terminations will not be adversely affected by temperatures between -40°C - 150°C. When properly applied, our sleeves have an efficiency rating of more than 90% according to EN 13411-3. This rating is based on the catalogue strength of wire rope.

Material:

1010 steel, fine grain. Spheroidized annealed for cold swaging.

Wire Rope:

TAL-X and TAL-X G sleeves are recommended for use with wire ropes of class 6x19 or 6x36, RRL, FC or IWRC wire rope according to EN 12385-4. Maximum rope grade is to be 1960.

Swaging:

The TAL-X and TAL-X G sleeves are swaged according to our specified swaging method for flemish eye sleeves.

Note!

Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

TALURIT™ SPLICING SYSTEM

METRIC SELECTION TABLE FOR TAL-X AND TAL-X G FLEMISH EYE SLEEVES

Sleeve Size (inch)	Wire Rope Capacity Diameter (mm)		Die identification		
	Fill factor (f=0,49-0,6)		Dies marked	Diameter after swaging (mm)	
TAL-X TAL-X G	Min. measured Rope diameter (mm)	Max. measured Rope diameter (mm)	TAL-X	Tapered Dies	Tol. (mm)
1/4	6,4	6,7	1/4	14,2	0 +0,3
5/16	7,0	8,3	5/16	18,7	0 +0,4
3/8	8,4	10,0	3/8	18,7	0 +0,4
7/16	10,1	11,7	7/16	25,2	0 +0,5
1/2	11,8	12,6	1/2 M	24,4	0 +0,7
1/2	12,7	13,3	1/2	25,2	0 +0,7
9/16	13,4	15,0	9/16	30,8	0 +0,7
5/8	15,1	16,7	5/8	30,8	0 +0,7
3/4	16,8	18,5	3/4 M	35,5	0 +0,7
3/4	18,0	19,9	3/4	36,4	0 +0,7
7/8	20,0	21,9	7/8 M	40,3	0 +0,8
7/8	22,0	23,3	7/8	41,7	0 +0,8
1	23,4	25,0	1 M	46,7	0 +0,8
1	25,1	26,7	1	48,1	0 +0,8



TAL-X sleeves, black oxidized



TAL-X G sleeves, galvanized

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!

TAL-X TAL-X G	Min. measured Rope diameter (mm)	Max. measured Rope diameter (mm)	TAL-X	1st stage 2nd stage	Tol. (mm)
1 1/8	26,8	28,5	1 1/8 (1ST) 1 1/8 M (2ND)	57,9 51,5	0 +0,9
1 1/8	28,0	30,7	1 1/8 (1ST) 1 1/8 (2ND)	57,9 53,0	0 +0,9
1 1/4	30,8	33,3	1 1/4 (1ST) 1 1/4 (2ND)	62,8 57,9	0 +0,9
1 3/8	33,4	34,8	1 3/8 (1ST) * 1 3/8 M (2ND)	67,5 61,0	0 +1,0
1 3/8	34,9	36,7	1 3/8 (1ST) 1 3/8 (2ND)	67,5 62,8	0 +1,0
1 1/2	36,0	38,0	1 1/2 (1ST) * 1 1/2 M (2ND)	73,7 65,5	0 +1,1
1 1/2	38,1	39,9	1 1/2 (1ST) 1 1/2 (2ND)	73,7 67,5	0 +1,1
1 3/4	40,0	43,9	1 3/4 (1ST) * 1 3/4 M (2ND)	84,0 73,7	0 +1,1
1 3/4	44,0	46,7	1 3/4 (1ST) 1 3/4 (2ND)	84,0 77,5	0 +1,2
2	48,0	50,7	2 (1ST) 2 M (2ND)	97,1 86,6	0 +1,2
2	50,8	53,3	2 (1ST) 2 (2ND)	97,1 89,2	0 +1,2

See next page for larger sizes

Numbers marked in green are special dies for the metric system.

* Note! STC dies in the sizes marked with a star are not compatible with TAL-X dies.

TALURIT™ SPLICING SYSTEM

METRIC SELECTION TABLE FOR TAL-X FLEMISH EYE SLEEVES

Sleeve Size (inch)	Wire Rope Capacity Diameter (mm)		Die identification		
	Fill factor (f=0,49-0,6)		Dies marked	Diameter after swaging (mm)	
TAL-X TAL-X G	Min. measured Rope diameter (mm)	Max. measured Rope diameter (mm)	TAL-X	1st stage 2nd stage	Tol. (mm)
2 1/4	53,4	57,1	2 1/4 (1ST) 2 1/4 M (2ND)	113,1 101,2	0 + 1,2
2 1/4	56,0	59,9	2 1/4 (1ST) 2 1/4 (2ND)	113,1 103,4	0 + 1,2
2 1/2	60,0	63,4	2 1/2 (1ST) 2 1/2 M (2ND)	122,5 109,8	0 + 1,2
2 1/2	63,0	66,7	2 1/2 (1ST) 2 1/2 (2ND)	122,5 113,1	0 + 1,2
2 3/4	66,8	69,8	2 3/4 (1ST) 2 3/4 M (2ND)	127,8 114,3	0 + 1,2
2 3/4	69,9	73,3	2 3/4 (1ST) 2 3/4 (2ND)	127,8 118,2	0 + 1,2
3	72,0	76,1	3 (1ST) 3 M (2ND)	134,9 120,9	0 + 1,3
3	76,2	80,0	3 (1ST) 3 (2ND)	134,9 124,5	0 + 1,3
3 1/4	80,1	82,5	3 1/4 (1ST) 3 1/4 M (2ND)	145,1 130,7	0 + 1,4
3 1/4	82,6	86,7	3 1/4 (1ST) 3 1/4 (2ND)	145,1 134,9	0 + 1,4
3 1/2	84,0	88,8	3 1/2 (1ST) 3 1/2 M (2ND)	156,8 139,6	0 + 1,4
3 1/2	88,9	93,3	3 1/2 (1ST) 3 1/2 (2ND)	156,8 145,1	0 + 1,5
3 3/4	95,3	100,0	3 3/4 (1ST) 3 3/4 (2ND)	168,4 156,8	0 + 1,5
4	101,6	106,7	4 (1ST) 4 (2ND)	180,6 168,4	0 + 1,5
4 1/2	114,3	120,0	4 1/2 (1ST) 4 1/2 (2ND)	201,0 187,5	0 + 1,8
5	127,0	133,4	5 (1ST) 5 (2ND)	224,3 210,3	0 + 2,3
6	152,4	160,0	6 (1ST) 6 (2ND)	272,2 252,2	0 + 2,5



TAL-X sleeves, black oxidized

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!

Max size sleeve by swaging machine capacity	
40t	1/4"
300t	1"
600t	1 1/2"
1000t	2 1/2"
2000t	4"
3700t	6"
4200t	6"

Dies are marked: TAL-X and size

TAL-X and TAL-X G sleeves: Wire rope terminations will not be adversely affected by temperatures between -40°C - 150°C. When properly applied, our sleeves have an efficiency rating of more than 90% according to EN 13411-3. This rating is based on the catalogue strength of wire rope.

Material: 1010 steel, fine grain. Spheroidized annealed for cold swaging.

Wire Rope: TAL-X and TAL-X G sleeves are recommended for use with wire ropes of class 6x19 or 6x36, RRL, FC or IWRC wire rope according to EN 12385-4. Maximum rope grade is to be 1960.

Swaging: The TAL-X and TAL-X G sleeves are swaged according to our specified swaging method for flemish eye sleeves.

Note! The system is designed to reduce the amount of die sets. This is done with the possibility to swage two different flemish eye sizes in one die set. See next page (3) Compatible DIE SET TABLE FOR TAL-X AND TAL-X G. Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

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TALURIT™ SPLICING SYSTEM

COMPATIBLE DIE SET TABLE FOR TAL-X AND TAL-X G - METRIC SYSTEM.

Note! The TAL-X system is designed to reduce the amount of die sets. This is done with the possibility to swage two different flemish eye sizes in one die set. See list below:

Die sets having the same dimensions and can be used for two sizes:

5/16 can also be used as 3/8
7/16 can also be used as 1/2
9/16 can also be used as 5/8
1 1/8 (1ST) can also be used as 1 1/4 (2ND)
1 1/4 (1ST) can also be used as 1 3/8 (2ND)
1 3/8 (1ST) can also be used as 1 1/2 (2ND)
1 1/2 (1ST) can also be used as 1 3/4 M (2ND)
2 1/4 (1ST) can also be used as 2 1/2 (2ND)
3(1ST) can also be used as 3 1/4 (2ND)
3 1/4 (1ST) can also be used as 3 1/2 (2ND)
3 1/2 (1ST) can also be used as 3 3/4 (2ND)
3 3/4 (1ST) can also be used as 4 (2ND)



TAL-X sleeves, black oxidized



TAL-X G sleeves, galvanized

TALURIT™ Splicing Instructions

SWAGING INSTRUCTIONS FOR TAL-X AND TAL-X G FLEMISH EYE SLEEVES



TAL-X sleeves, black oxidized



TAL-XG sleeves, galvanized

TALURIT™

Splicing Instructions

SELECTION OF FLEMISH EYE SLEEVES

FOLLOWING FLEMISH EYE SLEEVES ARE INTENDED FOR USE ON STEEL WIRE ROPES MADE FROM CARBON STEEL:

- TAL-X and TAL-X G

SELECTING THE CORRECT SLEEVE SIZE:

The correct size of sleeve is selected from the applicable table for each type of sleeves. Note applicable rope types in each table. All our ferrules comply with this quality specification and to other material specifications stated in the ruling standards.

Flemish Eye steel swaging sleeves are recommended for use with 6x19 or 6x37, IPS or XIP (EIP), XXIP (EEIP), RRL, FC, or IWRC wire rope of imperial sizes.

We have made a special selection table for metric wire ropes of class 6x19 and 6x36, RRL FC or IWRC according to EN 12385-4. Maximum grade is to be 1960.

For other types of wire rope and higher tensile grade please contact our technical department.



TAL-X sleeves, black oxidized TAL-X G sleeves, galvanized

Example of sleeve selecting table

Sleeve Size (inch)	Wire Rope Capacity Diameter (inch)		Die identification		
	Fill factor (f=0.49-0.6)		Dies marked	Diameter after swaging (inch)	
TAL-X TAL-X G	Min. measured Rope diameter (inch)	Max. measured Rope diameter (inch)	TAL-X	Tapered Dies	Tol. (inch)
1/4	0.252	0.263	1/4	0.557	0 + 0.012
5/16	0.311	0.328	5/16	0.734	0 + 0.016
3/8	0.374	0.394	3/8	0.734	0 + 0.016
7/16	0.437	0.459	7/16	0.990	0 + 0.020
1/2	0.500	0.525	1/2	0.990	0 + 0.028
9/16	0.563	0.591	9/16	1.211	0 + 0.028
5/8	0.626	0.656	5/8	1.211	0 + 0.028
3/4	0.752	0.788	3/4	1.431	0 + 0.028
7/8	0.874	0.919	7/8	1.640	0 + 0.031
1	1.000	1.050	1	1.892	0 + 0.031

TALURIT™

Splicing Instructions

ASSEMBLY OF FLEMISH EYE SLEEVES

GENERAL INSTRUCTIONS FOR FORMING FLEMISH EYES

General instructions for making Flemish Eyes may vary depending on the wire rope manufacturer.

For ropes with an independent wire rope core (IWRC) separate the strands into two groups one with the core and three strands, the other with three strands only. The starting point of separating the strands will determine the length of the strand ends at the throat of the splice. If the strand ends are shorter than desired, re-lay the strands and start one strand to the left. To shorten the strand ends, move one strand to the right.

1. Select the correct sleeve and slip it on the wire rope.
IMPORTANT: Check the wire rope size, select the correct size of sleeves and dies.

2. Divide the rope strands into two groups and un-lay the strands seven full lays, not counting the cut lay. Place the first group with the core on the right as you face the "Y" formed by the two legs. Seven lays of rope give maximum efficiency; there is no advantage in using more.

Note! If you are using a wire rope with fibre core, we recommend that the core is cut after re-laying and removed before splicing.

3. Cross the second group of 3 strands over the first group of 3 strands + the core. Then bring the 3 strand + core group over the 3 strand group and down into the eye formed until their strands conform to their natural configuration.

Note! Tests indicate reduced efficiency when using a 4/2 grouping of the strands as compared to a 3/3 grouping.

4. Continue to re-lay or rewind the 3-strand group around the core group with all strands in their natural spirals.



TALURIT™

Splicing Instructions

ASSEMBLY OF FLEMISH EYE SLEEVES

5. Position the strand ends and core ends evenly around the "throat" of the splice.

6. Drive the sleeve over the strand ends until they bottom in the sleeve. Care must be taken to ensure the strands are not displaced and check that the strand ends are evenly distributed around the intact wire rope within the sleeve.

7. The peripheral length of a soft eye in a sling shall be at least four times the rope lay length. The peripheral length of a soft eye in a crane rope shall be at least six times the rope lay length.

8. Select the correct dies and swage according to the instructions on the following pages.



TALURIT™

Splicing Instructions

SWAGING TAL-X AND TAL-X G FLEMISH EYE SLEEVES

BEFORE SWAGING:

CHECK DIES FOR WEAR

Before swaging, check your dies for wear and damage to be sure they are in good condition.

LUBRICATE DIES

Use TALUGREASE to lubricate dies or sleeves before swaging.

HOW TO SWAGE CARBON STEEL SLEEVES FOR FLEMISH EYES

These sleeves are designed to be used on 6x19 or 6x36 classification right regular lay, IPS, EIP, EEIP, I.W.R.C or FC wire rope manufactured to ISO specifications. There is also a table for metric wire ropes according to EN 12385-4, constructions 6x19, 6x26 and 6x36. This metric system has been validated according to EN 13411-3.

Note! There are two separate selection tables. One for the imperial system and one for the metric.

If other constructions of wire rope are to be used with these sleeves, sample assemblies should first be made and properly tested. Contact our technical department for more advice.

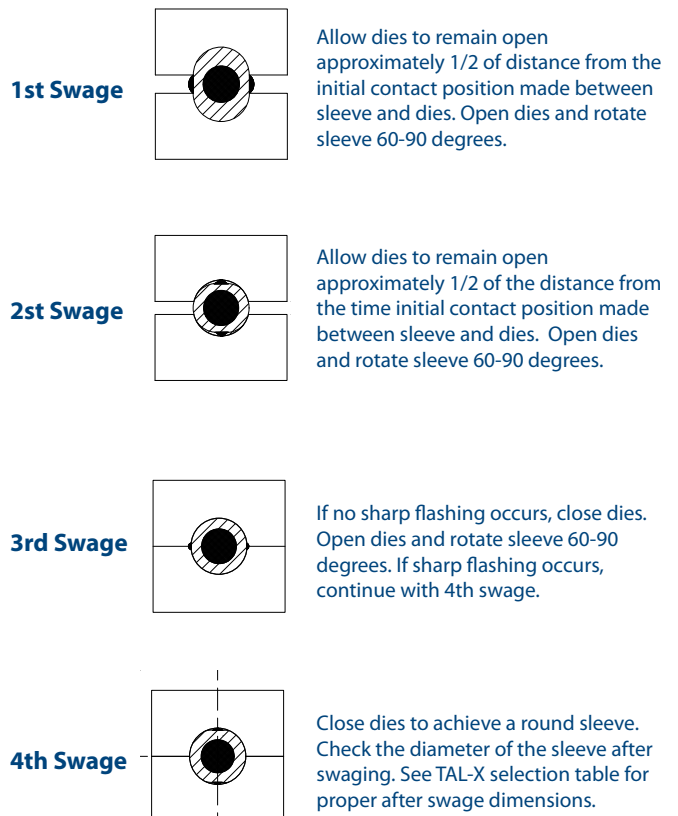


SWAGING INSTRUCTIONS:

SWAGING PROCEDURE FOR SLEEVE SIZE 1/4" THROUGH TO 1"

Lubricate the dies before swaging!

For these smaller sizes only tapered dies are used. Position the sleeve near the centre of the die-pocket – do not place it at either end of the tapered pocket. Do not allow sharp flashing to form.



Note:

It could be necessary to apply further swaging operations to provide a smooth surface and achieve proper after swage dimensions. Open dies and rotate sleeve 60-90 degrees between the swaging operations. Dies must be fully closed before swaging is complete.

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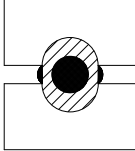
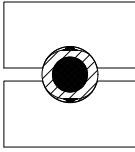
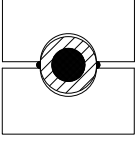
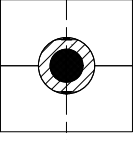
Splicing Instructions

SWAGING TAL-X AND TAL-X G FLEMISH EYE SLEEVES

SWAGING PROCEDURE FOR SLEEVE SIZE 1 1/8" THROUGH TO 1 3/4"

Start the swaging procedure with 1st stage dies. After performing the swaging procedure in 1st stage dies continue with swaging the procedure in 2nd stage dies. Lubricate the dies before swaging.

1st STAGE DIES

- 1st Swage**  Allow dies to remain open approximately 1/2 of the distance from the initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 2nd Swage**  Allow dies to remain open approximately 1/2 of the distance from the time initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 3rd Swage**  Allow dies to remain open approximately 1/2 of the distance from the time initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 4th/5th Swage**  If no sharp flashing occurs, close dies. Open dies and rotate sleeve 60-90 degrees between the swaging operations. If sharp flashing occurs continue with 5th swage.

2nd STAGE DIES

Same procedure between 1st swage to 4th swage. A 5-6th swaging operation may be required to round sleeve. Open dies and rotate sleeve 60-90 degrees between the swaging operations. Check the diameter of the sleeve after swaging. See TAL-X selection table for proper after swage dimensions.

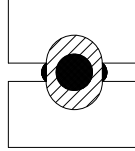
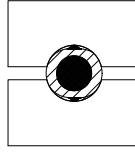
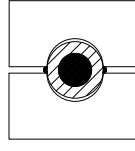
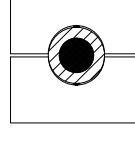
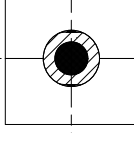
Note:

It could be necessary to apply further swaging operations to provide a smooth surface and achieve proper after swage dimensions. Open dies and rotate sleeve 60-90 degrees between the swaging operations. Dies must be fully closed before swaging is complete.

SWAGING PROCEDURE FOR SLEEVE SIZE 2" THROUGH TO 6"

Start the swaging procedure with 1st stage dies. After performing the swaging procedure in 1st stage dies continue with swaging the procedure in 2nd stage dies. Lubricate the dies before swaging.

1st STAGE DIES

- 1st Swage**  Allow dies to remain open approximately 1/2 of the distance from the initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 2nd Swage**  Allow dies to remain open approximately 1/2 of the distance from the time initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 3rd Swage**  Allow dies to remain open approximately 1/2 of the distance from the time initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 4th Swage**  Allow dies to remain open approximately 1/2 of the distance from the time initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 5th/6th Swage**  If no sharp flashing occurs, close dies. Open dies and rotate sleeve 60-90 degrees between the swaging operations. If sharp flashing occurs continue with 6th swage.

2nd STAGE DIES

See next page for instructions on how to continue the swaging operation with 2nd stage dies.

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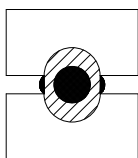
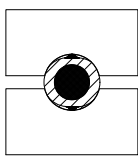
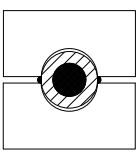
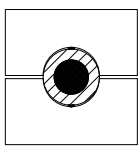
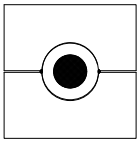
Splicing Instructions

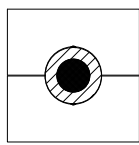
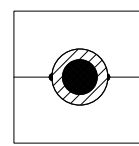
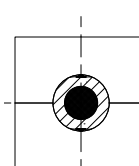
SWAGING TAL-X AND TAL-X G FLEMISH EYE SLEEVES

SWAGING PROCEDURE FOR SLEEVE SIZE 2" THROUGH TO 6"

Start the swaging procedure with 1st stage dies. After performing the swaging procedure in 1st stage dies continue with swaging the procedure in 2nd stage dies. Lubricate the dies before swaging.

2nd STAGE DIES

- 1st Swage**  Allow dies to remain open approximately 1/2 of the distance from the initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 2nd Swage**  Allow dies to remain open approximately 1/2 of the distance from the time initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 3rd Swage**  Allow dies to remain open approximately 1/2 of the distance from the time initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 4th Swage**  Allow dies to remain open approximately 1/2 of the distance from the time initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 5th Swage**  Allow dies to remain open approximately 1/2 of the distance from the time initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.

- 6th Swage**  Allow dies to remain open approximately 1/2 of the distance from the time initial contact position made between sleeve and dies. Open dies and rotate sleeve 60-90 degrees.
- 7th Swage**  If no sharp flashing occurs, close dies. Open dies and rotate sleeve 60-90 degrees. If sharp flashing occurs continue with 8th swage.
- 8th/9th Swage**  An 8-9th swaging operation may be required to achieve a round sleeve. Open dies and rotate sleeve 60-90 degrees between the swaging operations. Check the diameter of the sleeve after swaging. See TAL-X selection table for proper after swage dimensions.

Note:
It could be necessary to apply further swaging operations to provide a smooth surface and achieve proper after swage dimensions. Open dies and rotate sleeve 60-90 degrees between the swaging operations. Dies must be fully closed before swaging is complete.



TALURIT™

Splicing Instructions

CHECKING AND MARKING AFTER SWAGING

CHECK THE CONDITION OF THE SWAGED SLEEVE

Check that the sleeve has been properly swaged and the wire rope is correct in alignment. Each sleeve shall be visually examined, measured, free from flaws and defects.

Do not allow sharp flashing to form. If excessive flash starts to form during the swaging procedure, do not close fully. Work the sleeve in subsequent swagings until the dies can be closed fully. Rotate the sleeve 60°-90° for the second swaging.

CHECK THE DIAMETER AFTER SWAGING

At each set-up the swaged sleeve shall be dimensionally checked to verify that it is within the diameter limits (and when applicable, also within the length limits) specified in the tables for sleeves. The diameter shall be checked of each swaged sleeve to verify that it is within the diameter limits.

MARKING OF SLEEVES AFTER SWAGING

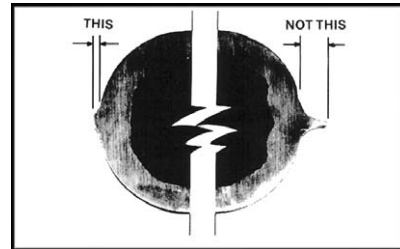
TAL-X Sleeves can be stamped for identification after swaging.

Please follow the directions below to avoid fractures:

- Use round corner stamps to a maximum depth of 1.38mm.
- The area for stamping should be on the side of the sleeve in the plane of the sling eye, and no less than 7mm from either end of the sleeve.

The following maximum letter sizes are recommended:

For sleeve No.	Max. letter Height
5/16"-7/8"	3 mm
1" - 6"	5 mm



Flash should be a slight bump like the left side of the illustration, not sharp like the right side of the illustration.



Always check the diameter after swaging.



Marking of swaged sleeves should always be carried out according to ruling standards.

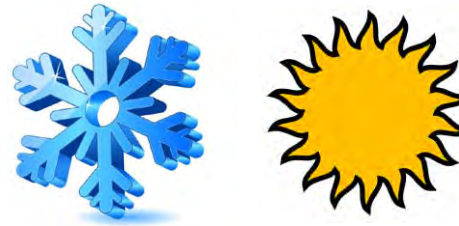
TALURIT™

Splicing Instructions

USAGE AND SCRAPPING

NON SUITABLE ENVIRONMENTS

Flemish Eye sleeve terminations shall normally not be exposed to temperatures outside the range -40°C to 100°C. See table below.



DE-RATED WORKING LOAD LIMIT OF SLINGS DUE TO TEMPERATURE (according to EN 13414-2)

Termination Type	Sleeve material	Rope core	De-rated working load limit expressed as % of WLL of the sling					
			Temperature, T, C°					
			-40<T≤100	100<T≤150	150<T≤200	200<T≤300	300<T≤400	400<T
Flemish Eye	steel	Fibre	100	Do not use	Do not use	Do not use	Do not use	Do not use
Flemish Eye	steel	Steel	100	100	90	75	65	Do not use

CHECK FOR DEFORMATION

Slings shall be taken out of use if their sleeves have been exposed to deformation or when the outer diameter has been reduced to less than 95% of the original diameter. If the sleeve has started to pull out from its position, it has to be taken out of service immediately.



Always check the sleeve for deformations.

TALURIT™ SPLICING SYSTEM

Selection table for STTE, STTF, STTT and STTT-R – swage terminals

Part No.	Wire Rope Capacity Diameter (mm)		Die Identification							Required pressure approx.	
	Fill Factor (f=0,62-0,78)		Dies marked	Diameter after swaging	Key width after swaging	Total length after swaging approx.					
	Min	Max				STTE	STTF	STTT and STTT-R			
STTE STTF STTT STTT-R	Min	Max	STT	(mm) / Tol.	(mm) / Tol.	(mm)	(mm)	(mm)	(kN)		
1/4	5,8	6,7	1/4	11,2	+0,4 0	10,7	+0,4 0	118	127	111	1 000
5/16 3/8	6,8 8,4	8,3 10,0	3/8	17,5 17,5		16,6 16,6		149 149	169 169	162 171	2 000
7/16 1/2	10,1 11,8	11,7 13,3	1/2	22,4 22,4	+0,5 0	21,3 21,3	+0,5 0	189 189	211 211	204 222	3 000
9/16 5/8	13,4 15,1	15,0 16,7	5/8	28,4 28,4		27,0 27,0		239 239	259 259	273 286	4 000
3/4	16,8	19,8	3/4	35,1	+0,7 0	33,4	+0,7 0	283	316	333	5 000
7/8	19,9	23,3	7/8	38,1		36,3		331	369	366	7 000
1	23,4	26,6	1	44,5	+0,9 0	42,4	+0,9 0	375	423	426	8 500
1 1/8	26,7	29,8	1 1/8	50,8		48,4		417	474	486	10 000
1 1/4	29,9	33,3	1 1/4	57,2	+0,9 0	54,5	+0,9 0	471	526	546	13 000
1 3/8	33,4	36,5	1 3/8	63,5		60,5		515	575	615	14 000
1 1/2	36,6	39,7	1 1/2	69,9	+0,9 0	66,6	+0,9 0	556	630	648	15 000
1 3/4	39,8	46,7	1 3/4	76,2		72,6		655	734	750	16 000
2	46,8	53,2	2	88,9	+0,9 0	84,7	+0,9 0	750	850	852	17 000
2 1/4	54,0	59,4	2 1/4	101,2		96,4		814	893	954	20 000
2 1/2	60,0	66,7	2 1/2	111,4	+0,9 0	106,1	+0,9 0	850	939	1014	24 000
3	72,0	80,0	3	134,0		127,6		1031	1117	1188	28 000

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



STTE



STTF



STTT



STTT-R

STTE, STTF, STTT and STTT-R swage terminals:

The STTE, STTF, STTT and STTT-R swage terminals have been validated according to TALURIT™ splicing system, and fulfill the requirements of EN 13411-8.

Wire Rope:

- The tested class is 8 x 19, fill factor 0,74, rope grade 2160
 - The tested class is 6 x 36 (IWRC), fill factor 0,74, rope grade 2160
- Swage terminals are also recommended for use on 6 x 19 or 6 x 37 IWRC regular lay ropes. They are not recommended for use on fibre core or lang lay ropes. Maximum rope grade is to be 2160 for STTE, STTF and STTT-R. For STTT, maximum rope grade is to be 1960. Wire rope shall conform to EN 12385-4 and -5.

Swaging:

Follow the specific swaging procedure regarding **STTE, STTF, STTT and STTT-R**

NOTE!

Due to the variety of steel wire ropes, it is difficult to approve all of them. Verifying tests must be performed in order to verify the strength of application. Steel wire rope with a fiber core has not been tested. Contact our Technical Department for more advice. Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.



IMPORTANT!

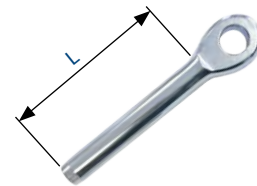
Wire rope inside the swage terminal shall not be annealed, but cut by a disc or blade!

TALURIT™ SPLICING SYSTEM

Selection table for TALUSWAGE swage terminals - round shape

Terminal No.	Wire Rope Capacity Diameter (mm)	Die Identification				
	Fill factor (f=0,52-0,78) Fibre Core	Dies marked	Inner diameter of the terminal	Outer diameter before pressing	Outer diameter after pressing	
TALUSWAGE Terminal	(mm)	RF	(mm)	(mm)	(mm) / Tol.	
2	2	2	2,2	5,5	4,82	0
2,5	2,5	2,5	2,8	5,5	4,82	-0,12
3	3	3	3,5	6,4	5,56	
4	4	4	4,4	7,5	6,35	
5	5	5	5,3	9,1	7,95	
6	6	6	6,5	12,5	11,12	0 -0,17
7	7	7	7,5	14,3	12,70	0
8	8	8	8,4	16,1	14,30	-0,20
10	10	10	10,5	17,8	15,90	
12	12	12	12,5	21,4	17,80	
14	14	14	14,8	25,0	22,23	
16	16	16	17,0	28,2	25,40	0 -0,25
19	19	19	20,0	34,5	31,75	0
22	22	22	23,5	40,5	36,50	-0,30

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



TALUSWAGE Terminals
(Fitting in picture: Eye-terminal)
Round shape
(stainless steel or carbon steel)

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal metallic cross-sectional area factor of the rope.

$$C = \frac{f \cdot \pi}{4}$$

TALUSWAGE terminals :

The TALUSWAGE terminals have been validated according to TALURIT™ splicing system. Examples of fittings are; Eye-Terminals, Outside thread. Terminals, Fork Terminals, Terminal with toggle, Rigging screw with terminal and toggle and Terminal with internal thread (check with our sales department for details).

Wire rope:

Above table applies to stainless steel and bright or galvanized single layer steel wire ropes with round strands and a wire strength of 1 570 – 1770 N/mm² (160-180 kp/mm²). Suitable for following wire rope constructions: 1x7, 1x19, 7x7 and 7x19. Not suitable for 6x12 (12/Fibre) and 6x24 (15/9 Fibre) constructions.

Swaging:

Follow the specific swaging procedure regarding TALUSWAGE terminals

Note!

The length to be pressed is normally ten times the wire diameter. We do not guarantee strength of slings for lifting or terminations for supporting activities made of TALUSWAGE terminals. A termination performed according to our instructions will normally withstand a tensile strength of 90% of the minimum-breaking load (MBL) of the wire rope. Verifying tests must be done in order to find out the strength. Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.



IMPORTANT!

Wire rope inside the swage terminal shall not be annealed, but cut by a disc or blade!

TALURIT™ SPLICING SYSTEM

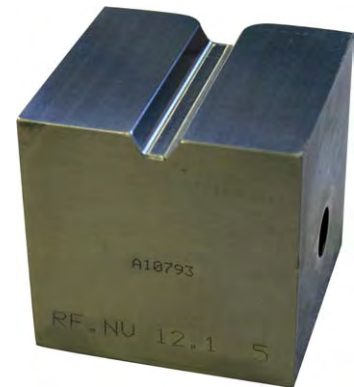
Selection table for TALUSWAGE swage terminals - hexagonal shape

Ferrule No.	Wire Rope Capacity Diameter (mm)	Die Identification			
	Fill factor (f=0,52-0,78) Fibre Core and Steel Core	Dies marked	Inner diameter for the terminal	Outer diameter before pressing	Key width after pressing
TALUSWAGE Terminal	(mm)	RF NV	(mm)	(mm)	(mm) / Tol.
2	2	4,8	2,2	5,5	4,80 0
2,5	2,5	4,8	2,8	5,5	4,80 -0,12
3	3	5,3	3,5	6,4	5,30
4	4	6,2	4,4	7,5	6,20
5	5	7,5	5,3	9,1	7,50
6	6	10,6	6,5	12,5	10,6 0 -0,17
7	7	12,1	7,5	14,3	12,10 0
8	8	13,6	8,4	16,1	13,60 -0,20
10	10	14,8	10,5	17,8	14,80
12	12	16,8	12,5	21,4	16,80
14	14	21,0	14,8	25,0	21,00
16	16	23,4	17,0	28,2	23,40 0 -0,25

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



TALUSWAGE Terminals
(Fitting in picture: Eye-terminal)
Hex shape
(stainless steel or carbon steel)



RF NV
special press die for hex shape

TALUSWAGE terminals : The TALUSWAGE terminals have been validated according to TALURIT™ splicing system. Examples of fittings are; Eye-Terminals, Outside thread. Terminals, Fork Terminals, Terminal with toggle, Rigging screw with terminal and toggle and Terminal with internal thread (check with our sales department for details).

Wire rope: Above table applies to stainless steel and bright or galvanized single layer steel wire ropes with round strands and a wire strength of 1 570 – 1770 N/mm² (160-180 kp/mm²). Suitable for following wire rope constructions (fibre core and IWRC): 1x7, 1x19, 7x7 and 7x19. Not suitable for 6x12 (12/Fibre) and 6x24 (15/9 Fibre) constructions.

Swaging: Follow the specific swaging procedure regarding TALUSWAGE

Note! The length to be pressed is normally ten times the wire diameter. We do not guarantee strength of slings for lifting or terminations for supporting activities made of TALUSWAGE terminals. A termination performed according to our instructions will normally withstand a tensile strength of 90% of the minimum-breaking load (MBL) of the wire rope. Verifying tests must be done in order to find out the strength. Please read our TALURIT™ Splicing Instructions carefully to secure a safe and correct swaging operation.

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal metallic cross-sectional area factor of the rope.

$$C = \frac{f \cdot \pi}{4}$$



IMPORTANT!

Wire rope inside the swage terminal shall not be annealed, but cut by a disc or blade!

TALURIT™
Splicing Instructions

SWAGING INSTRUCTIONS FOR SWAGE TERMINALS



TALURIT™

Splicing Instructions

SELECTION OF SWAGE TERMINALS

FOLLOWING SWAGE TERMINALS ARE INTENDED FOR USE ON STEEL WIRE ROPES MADE FROM CARBON STEEL:

- STTE (Eye)
- STTF (Fork)
- STTT (Threaded swage terminal)
- STTT-R (Reinforced threaded swage terminal)
- TALUSWAGE (Stainless steel terminals in many different configurations)

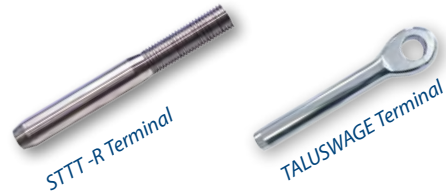
SELECTING THE CORRECT SIZE OF SWAGE TERMINAL:

The correct size of swage terminal is selected from the applicable table for each type of swage terminals. Note applicable rope types in each table. All our swage terminals comply with this quality specification and to other material specifications stated in the ruling standards.

Selecting the correct size of swage terminal is based on the following criteria: The rope grade, the diameter of the wire rope, the fill factor or metallic cross-sectional area factor, the wire rope core i.e. fibre core (FC) or steel core (IWRC= independent wire rope core).



STTE Terminal STTF Terminal STTT Terminal



STTT-R Terminal

TALUSWAGE Terminal

Example of swage terminal selecting table

Part No.	Wire Rope Capacity Diameter (mm)		Die Identification							Required pressure approx. (kN)
	Fill Factor (f=0,62-0,78)		Dies marked	Diameter after swaging	Key width after swaging	Total length after swaging approx.				
	Min	Max				STTE	STTF	STTT and STTT-R		
STTE STTF STTT STTT-R	Min	Max	STT	(mm) / Tol.	(mm) / Tol.	(mm)	(mm)	(mm)	(kN)	
1/4	5,8	6,7	1/4	11,2	10,7	118	127	111	1 000	
5/16	6,8	8,3	3/8	17,5	16,6	149	169	162	2 000	
3/8	8,4	10,0		17,5	16,6	149	169	171		
7/16	10,1	11,7	1/2	22,4	21,3	189	211	204	3 000	
1/2	11,8	13,3		22,4	21,3	189	211	222		
9/16	13,4	15,0	5/8	28,4	27,0	239	259	273	4 000	
5/8	15,1	16,7		28,4	27,0	239	259	286		
3/4	16,8	19,8	3/4	35,1	33,4	283	316	333	5 000	
7/8	19,9	23,3	7/8	38,1	36,3	331	369	366	7 000	
1	23,4	26,6	1	44,5	42,4	375	423	426	8 500	
1 1/8	26,7	29,8	1 1/8	50,8	48,4	417	474	486	10 000	
1 1/4	29,9	33,3	1 1/4	57,2	54,5	471	526	546	13 000	
1 3/8	33,4	36,5	1 3/8	63,5	60,5	515	575	615	14 000	
1 1/2	36,6	39,7	1 1/2	69,9	66,6	556	630	648	15 000	
1 3/4	39,8	46,7	1 3/4	76,2	72,6	655	734	750	16 000	
2	46,8	53,2	2	88,9	84,7	750	850	852	17 000	
2 1/4	54,0	59,4	2 1/4	101,2	96,4	814	893	954	20 000	
2 1/2	60,0	66,7	2 1/2	111,4	106,1	850	939	1014	24 000	
3	72,0	80,0	3	134,0	127,6	1031	1117	1188	28 000	

TALURIT™

Splicing Instructions

ASSEMBLY OF SWAGE TERMINALS

ASSEMBLY OF WIRE ROPE IN SWAGE TERMINALS.

Only valid for assembly of rotation resistant wire rope of high grade!
Other wire rope types should be inserted in full length.

1. Cut the wire rope with a disc between two narrow tightened hose clamps.

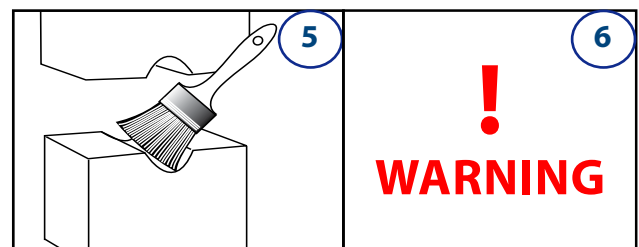
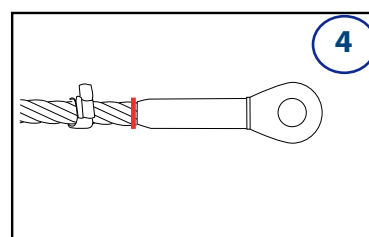
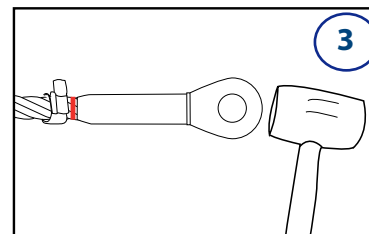
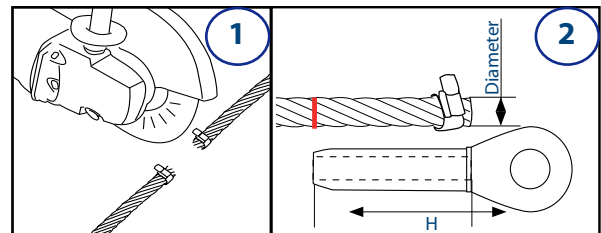
2. Measure the largest diameter of the wire rope and choose terminal in the table. Find the insertion length, H, in the table. Mark the wire rope with the insertion length, H.

3. Insert the wire rope in the terminal. Then loosen the hose clamp slightly. Hammer the terminal into position with a rubber mallet. The mark shows when it's fully entered.

4. Tighten the hose clamp approximately 3-5 cm from the terminal. Keep the hose clamp on the wire rope during the entire swaging operation. Remove it afterwards.

5. Lubricate the bore of both dies. Apply oil on the edge of the lower die, for oil drop test.

6. Reduce the pressure with the pressure regulating valve not to overload dies.



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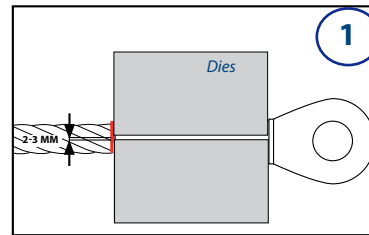
Splicing Instructions

SWAGING INSTRUCTIONS FOR SWAGE TERMINALS - ROUND SHAPE

SWAGING INSTRUCTIONS: ROUND SHAPE AFTER SWAGING

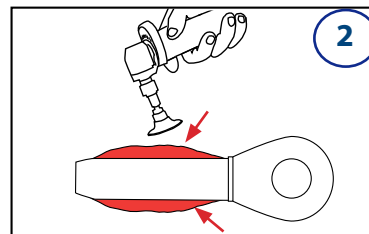
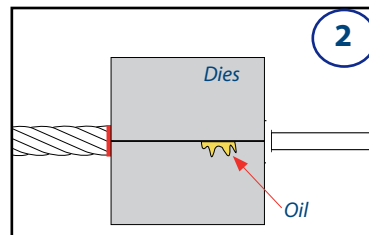
1. First step:

Use the pressure regulating valve and swage until the distance 2-3 mm between the dies remains.



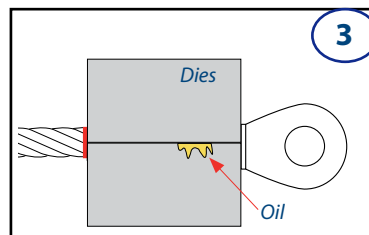
2. Second step:

Open dies and lubricate. Rotate 90°. Close the dies using the pressure regulating valve. Stop swaging when applied oil is pressed out, then the dies are completely closed (oil drop test). If flash material appears, remove it thoroughly with a grinder. Proceed with third step.

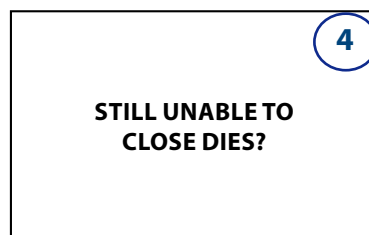


3. Third step:

Open dies and rotate 90° clockwise from position in second step and close dies. Repeat procedure in second and third step until the surface is smooth. Up to 10 swaging operations can be necessary. Check the diameter after swaging.



4. Swage the terminals in a larger swager or use multi-stage swaging. (See next page)



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Splicing Instructions

MULTI-STAGE SWAGING SWAGE TERMINALS - ROUND SHAPE

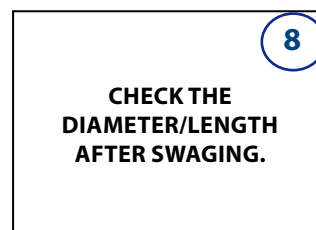
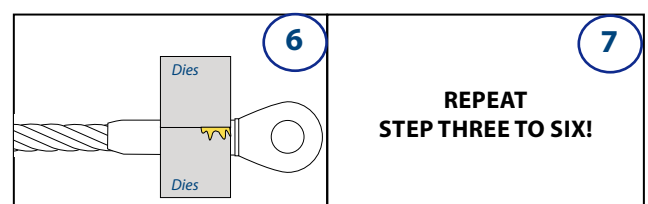
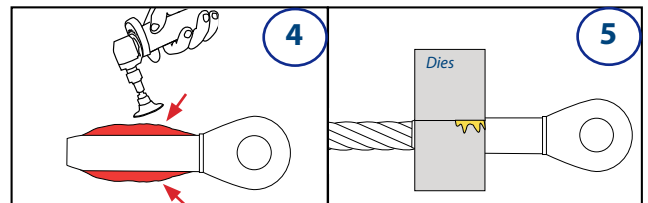
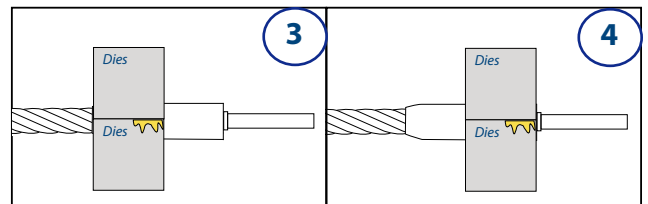
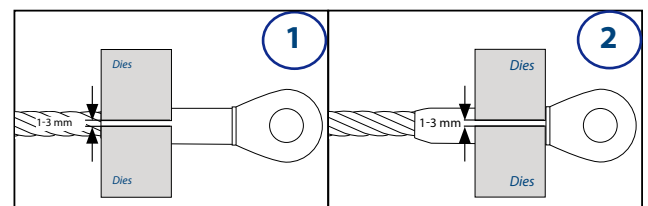
MULTI-STAGE SWAGING INSTRUCTIONS: ROUND SHAPE AFTER SWAGING

Always start with the assembly procedure as per page 1. If the machine capacity is not enough to close the dies, the multi-stage method with the custom made, shorter dies can be used.



Always use the custom made shorter dies for multi-stage swaging. If larger dies for single stage swaging are used, the dies will be subjected to uneven load and there is a risk of severe damage to the dies/swager.

- 1. First step:** Lubricate. Place the first half of the terminal in the die. Swage until approx. 2-3 mm remains between the dies, depending on size. NOTE! Start swaging process on the rope side.
- 2. Second step:** Open the dies. Lubricate and then place the unswaged half of the terminal between the dies. Swage until approx. 2-3 mm remains between the dies.
- 3. Third step:** Open the dies and rotate the terminal 90 degrees. Lubricate. Place the rotated terminal in the same position as in the first step. Apply oil on the lower die. Use the pressure regulating valve to close the dies. Stop when the oil is pressed out.
- 4. Fourth step:** Open the dies. Lubricate and place the terminal in the same position as in the second step. Apply oil on the lower die. Use the pressure regulating valve to close the dies. Stop when the oil is pressed out. If flash material appears, remove it thoroughly with a grinder.
- 5. Fifth step:** Lubricate. Rotate the terminal 90 degrees from position in the third step. Apply oil on the lower die. Use the pressure regulating valve to close the dies. Stop when the oil is pressed out.
- 6. Sixth step:** Open the dies. Lubricate and place the second half of the terminal in the die. Apply oil on the lower die. Use the pressure regulating valve to close the dies. Stop when the oil is pressed out.
- 7.** Open the dies. Lubricate and repeat step three to six. Repeat up to 10 times to achieve a smooth surface.
- 8.** Check the diameter/length after swaging.



**REPEAT
STEP THREE TO SIX!**

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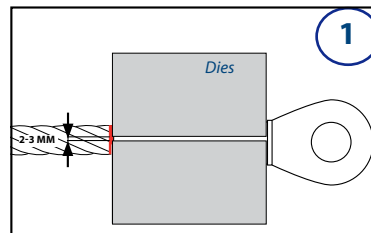
Splicing Instructions

SWAGING INSTRUCTIONS FOR SWAGE TERMINALS - HEX SHAPE

SWAGING INSTRUCTIONS: HEXAGONAL SHAPE AFTER SWAGING

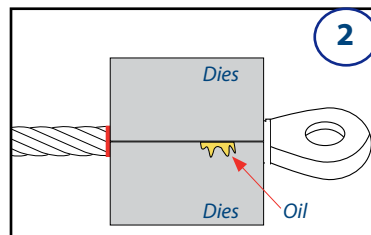
1. First step:

Use the pressure regulating valve and swage until the distance 2-3 mm between the dies remains.



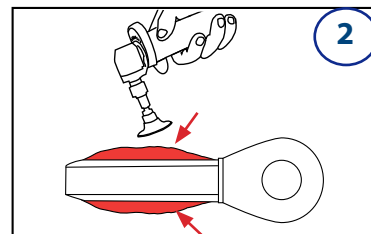
2. Second step:

Open dies and lubricate. Rotate 60° clockwise. Close the dies using the pressure regulating valve. Stop swaging when applied oil is pressed out, then the dies are completely closed (oil drop test). If flash material appears, remove it thoroughly with a grinder, if necessary. Proceed with third step.

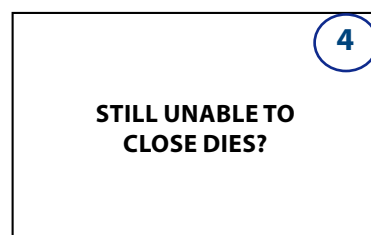
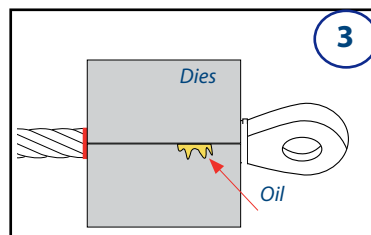


3. Third step:

Open dies and rotate 120° counter clockwise from position in second step and close dies. Then repeat procedure in second and third step until the surface is smooth. Up to 10 swaging operations can be necessary. Check the diameter after swaging.



4. Unable to close dies? Swage the terminals in a larger swager or use multi-stage swaging. (See next page)



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Splicing Instructions

MULTI-STAGE SWAGING SWAGE TERMINALS -HEX SHAPE

MULTI STAGE SWAGING INSTRUCTIONS: HEXAGONAL SHAPE AFTER SWAGING

Always start with the assembly procedure as per page 1. If the machine capacity is not enough to close the dies, the multi-stage method with the shorter dies can be used.



Always use the shorter dies for multi-stage swaging. If larger dies for single stage swaging are used, the dies will be subjected to uneven load and there is a risk of severe damage to the dies/swager.

1. First step: Lubricate. Place the first half of the terminal in the die. Swage until approx. 2-3 mm remains between the dies.

2. Second step: Open the dies. Lubricate and then place the unswaged half of the terminal in the dies. Swage until approx. 2-3 mm remains between the dies.

3. Third step: Open the dies and rotate the terminal 60 degrees. Lubricate. Place the rotated terminal in the same position as in the first step. Apply oil on the lower die. Use the pressure regulating valve to close the dies. Stop when the oil is pressed out.

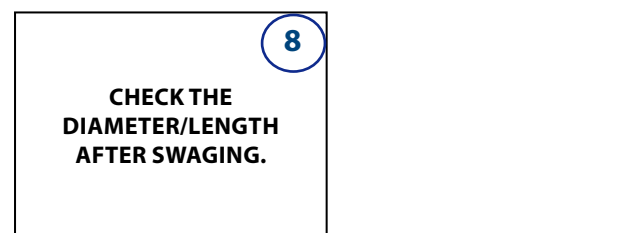
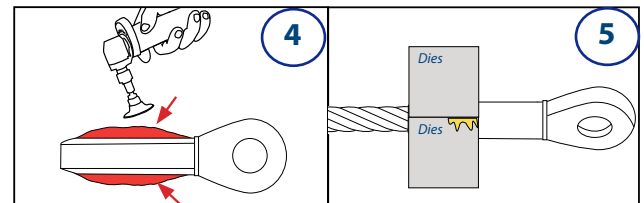
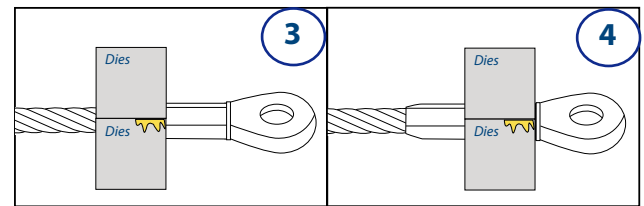
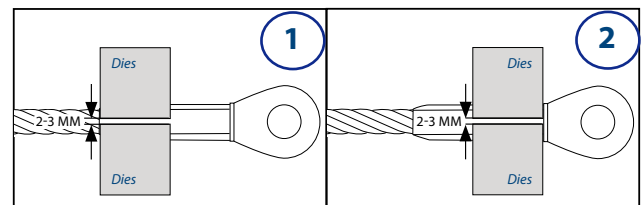
4. Fourth step: Open the dies. Lubricate and place the terminal in the same position as in the second step. Apply oil on the lower die. Use the pressure regulating valve to close the dies. Stop when the oil is pressed out. If flash material appears, remove it thoroughly with a grinder.

5. Fifth step: Lubricate. Rotate the terminal 120 degrees counter clockwise from position in the third step. Apply oil on the lower die. Use the pressure regulating valve to close the dies. Stop when the oil is pressed out.

6. Sixth step: Open the dies. Lubricate and place the second half of the terminal in the die. Apply oil on the lower die. Use the pressure regulating valve to close the dies. Stop when the oil is pressed out.

7. Open the dies. Lubricate and repeat step three to six. Repeat up to 10 times to achieve a smooth surface.

8. Check the diameter/length after swaging.



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Splicing Instructions

CHECKING AND MARKING AFTER SWAGING

CHECK THE CONDITION OF THE SWAGED TERMINAL

Check that the terminal has been properly swaged and the wire rope is correct in alignment. Each terminal shall be visually examined, free from flaws and defects and shall not exhibit any sharp edges or rough surfaces.

CHECK THE MEASUREMENT AFTER SWAGING

At each set-up the swaged terminal shall be dimensionally checked to verify that it is within the diameter (or across flat on hexagonal shape) and, when applicable, length limits specified in the tables for terminals. Each swaged terminal after the set-up shall be checked for diameter (or across flat) to verify that it is within the limits.

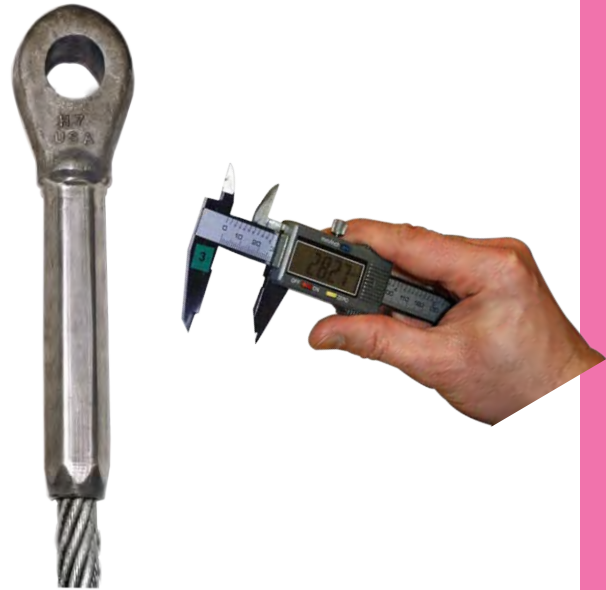
MARKING OF TERMINAL AFTER SWAGING

Marking of swaged terminals should be carried out according to ruling standards.

The swaged terminal shall be legibly and indelibly marked with the swaged terminal manufacturer's name, symbol or mark and traceability code identifying the assembly with a certificate.

The certificate shall include at least the following information:

- name and address of the swaged terminal manufacturer and, if appropriate, an authorized representative, including the date of issue of the certificate and authentication ;
- number and relevant part of the European Standard
- description of the assembly; and
- traceability code as per marking



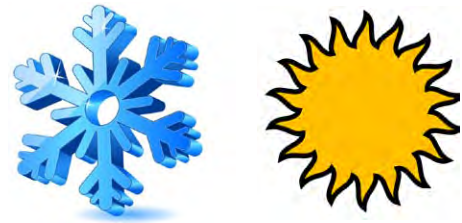
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Splicing Instructions

USAGE AND SCRAPPING

NON SUITABLE ENVIRONMENTS

Terminals made from stainless steel or carbon steel shall not be exposed to temperatures outside the range: -40°C to 100°C (IWRC).

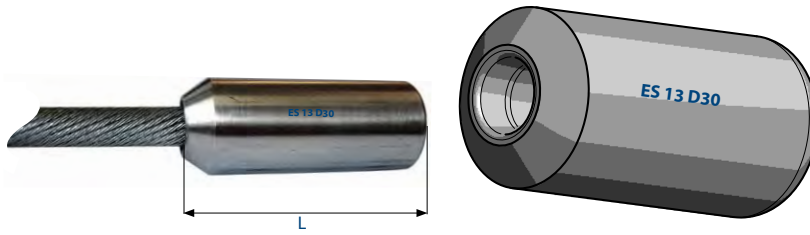


CHECK FOR DEFORMATION AND CHECK DIAMETER

Terminations shall be taken out of use if the terminals have been exposed to deformation or when the outer diameter has been reduced to less than 95% of the original diameter.

TALURIT™ SPLICING SYSTEM

Selection table for ES - end stops



End stop No.	Wire rope diameter f=0,61-0,76 (mm)		Press dies marked	Press dies Type	Diameter after swag- ing (mm)	Tolerance	Length, L, after swag- ing approx. (mm)	Required pressure approx. (kN)
	min	max						
ES 13 D30	13,0	13,9	ES D30	D	30	+0,3 0	90	3 000
ES 14 D30	14,0	14,9						
ES 15 D30	15,0	15,9						
ES 16 D36	16,0	16,9	ES D36	D	36	+0,4 0	108	4 000
ES 17 D36	17,0	17,9						
ES 18 D36	18,0	18,9						
ES 19 D44	19,0	19,9	ES D44	D	44	+0,4 0	126	5 000- 6 000
ES 20 D44	20,0	20,9						
ES 21 D44	21,0	21,9						
ES 22 D44	22,0	22,9						
ES 23 D52	23,0	23,9	ES D52	D, E or E1	52	+0,4 0	144	7 000- 9 000
ES 24 D52	24,0	24,9						
ES 25 D52	25,0	25,9						
ES 26 D52	26,0	26,9						
ES 26 D58	26,0	26,9	ES D58	D, E or E1	58	+0,5 0	161	8 000- 12 000
ES 27 D58	27,0	27,9					174	
ES 28 D58	28,0	28,9						
ES 29 D58	29,0	29,9						
ES 30 D64	30,0	30,9	ES D64	D, E or E1	64	+0,6 0	192	12 000- 15 000
ES 31 D64	31,0	31,9						
ES 32 D64	32,0	32,9						

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!

ES end stops:

ES end stops are designed for full proof applications of rotation resistant wire rope. Maximum rope grade is to be 1960.

Wire rope:

The system is tested for rotation resistant wire rope, class 35 (W) x 7, fill factor 0,71. Rope grade 1960. The system with this rope has been validated according to EN 13411-8.

Swaging:

The ES end stops are swaged according to our specified swaging method for ES end stops

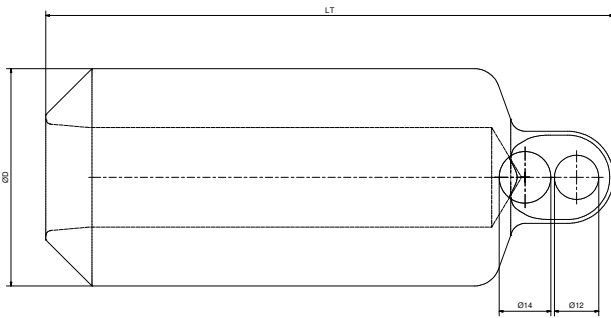
Note!

Due to the variety of steel wire ropes, it is difficult to approve all of them. If other wire rope constructions are to be used tests must be done in order to verify the strength of application. There are numerous differences between the many wire rope manufactures rope properties, proprietary designs or individual constructions, tests must be done in order to verify the efficiency of the system when used with a particular wire rope manufactures specific product. More specific, wire rope technology is advancing and rope manufactures reserve the right to make changes to existing designs or even replace existing designs with new ones. Additionally, specific designs between several rope manufactures can show small or large differences while still being classified under class 35 (W) x 7. These differences could add up to a loss of efficiency of the system. Therefore the test results achieved by using a particular rope construction or design should be considered valid for that manufactures specific design only.

We can perform these tests in our own pull test benches.

TALURIT™ SPLICING SYSTEM

Selection table for ESP – end stops



Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!

End stop No.	Wire rope diameter f=0,61-0,76 (mm)		Press dies marked	Press dies Type	Diameter after swaging (mm)	Tolerance	Length, L, after swaging approx. (mm)	Required pressure approx. (kN)
	min	max						
ESP 23 D52	23,0	23,9	ES D52	D, E or E1	52	+0,4 0	178	7 000- 9 000
ESP 24 D52	24,0	24,9						
ESP 25 D52	25,0	25,9						
ESP 26 D52	26,0	26,9						
ESP 27 D58	27,0	27,9	ES D58	D, E or E1	58	+0,5 0	203	8 000- 12 000
ESP 28 D58	28,0	28,9						
ESP 29 D58	29,0	29,9						
ESP 30 D64	30,0	30,9	ES D64	D, E or E1	64	+0,6 0	219	12 000- 15 000
ESP 31 D64	31,0	31,9						
ESP 32 D64	32,0	32,9						

ESP end stops:

ESP end stops are designed for full proof applications of rotation resistant wire rope of grade 1960.

Wire rope:

The system is tested for rotation resistant wire rope, class 35 (W) x 7, fill factor 0.71 for wire ropes of grade 1960. The maximum rope grade is to be 1960. The system with this rope has been validated according to EN 13411-8.

Swaging:

The ESP end stops are swaged according to our specified swaging method for ESP end stops

Note!

Due to the variety of steel wire ropes, it is difficult to approve all of them. If other wire rope constructions are to be used tests must be done in order to verify the strength of application. There are numerous differences between the many wire rope manufactures rope properties, proprietary designs or individual constructions, tests must be done in order to verify the efficiency of the system when used with a particular wire rope manufactures specific product. More specific, wire rope technology is advancing and rope manufactures reserve the right to make changes to existing designs or even replace existing designs with new ones. Additionally, specific designs between several rope manufactures can show small or large differences while still being classified under class 35 (W) x 7. These differences could add up to a loss of efficiency of the system. Therefore the test results achieved by using a particular rope construction or design should be considered valid for that manufactures specific design only.

We can perform these tests in our own pull test benches.

TALURIT™ SPLICING SYSTEM

Selection table for R End stops

End stop No.	Wire Rope Capacity Diameter (mm)				Die Identification			Required pressure approx. (kN)
	Fill factor (f=0,40-0,50) Fibre Core		Fill factor (f=0,50-0,60) Steel Core		Dies marked	Diameter after pressing (mm) / Tol.		
R	Min	Max	Min	Max	T			
1.5	0,9	1,0	0,8	0,9	1	3	+0,1	10
	1,1	1,5	1,0	1,4	1,5	3,8	0	20
2	1,6	2,0	1,5	1,9	2	4	+0,1	30
	2,1	2,6	2,0	2,4	2,5	5	0	45
3	2,7	3,1	2,5	2,8	3	6		60
	3,2	3,6	2,9	3,3	3,5	7		80
4	3,7	4,1	3,4	3,8	4	8		100
	4,2	4,6	3,9	4,2	4,5	9		125
5	4,7	5,1	4,3	4,7	5	10		180
6	5,2	6,1	4,8	5,6	6	12	+0,3	210
6.5	6,2	6,6	5,7	6,1	6,5	13	0	250
7	6,7	7,1	6,2	6,6	7	14		320
8	7,2	8,2	6,7	7,5	8	16		410
9	8,3	9,0	7,6	8,2	9	18		500
10	9,1	10,1	8,3	9,2	10	20	+0,4	600
11	10,2	11,2	9,3	10,2	11	22	0	720
12	11,3	12,3	10,3	11,2	12	24		850
13	12,4	13,4	11,3	12,2	13	26		1 000
14	13,5	14,5	12,3	13,2	14	28	+0,5	1 300
16	14,6	16,1	13,3	14,7	16	32	0	1 600
18	16,2	18,2	14,8	16,6	18	36	+0,6	2 000
20	18,3	20,2	16,7	18,4	20	40	0	2 400
22	20,3	22,4	18,5	20,4	22	44		2 900
24	22,5	24,6	20,5	22,5	24	48	+0,8	3 400
26	24,7	26,9	22,6	24,6	26	52	0	3 900
28	27,0	28,6	24,7	26,1	28	56		4 500
30	28,7	30,8	26,2	28,1	30	60	+1,0	5 100
32	30,9	32,7	28,2	29,9	32	64	0	5 800

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



Round End stop (R)
(aluminium)

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal metallic cross-sectional area factor of the rope.

$$C = \frac{f \cdot \pi}{4}$$

R end stops: The R end stops are not recommended for use in high strength applications.

Wire rope: Above table applies to bright or galvanized single layer steel wire ropes with round strands and rope grade 1 570 – 1 960. Wire ropes shall conform to EN 12385-4 and 5. The types of rope shall be Ordinary or Lang lay. For higher and lower filling factor, please contact our Technical Department.

Swaging: The R end stops are swaged according to our specified swaging method for R and RCU end stops

Note! The R end stops, are not allowed to use for lifting applications. The expected strength regarding this end-termination is approximately 50% of the MBL of the wire rope (informative only). Accordingly, verifying tests must be performed to secure the strength of the application.

Rev. 2011-12-06

TALURIT™ SPLICING SYSTEM

Selection table for RCU End stops

End stop No.	Wire Rope Capacity Diameter (mm)				Die Identification				Required pressure approx. (kN)
	Fill factor (f=0,40-0,50) Fibre Core		Fill factor (f=0,50-0,60) Steel Core		Dies marked	Diameter after pressing (mm) / Tol.			
RCU	Min	Max	Min	Max	T				
1.5	0,9	1,0	0,8	0,9	1	3	+0,1	10	
	1,1	1,5	1,0	1,4	1,5	3,8	0	20	
2	1,6	2,0	1,5	1,9	2	4	+0,1	30	
	2,1	2,6	2,0	2,4	2,5	5	0	45	
3	2,7	3,1	2,5	2,8	3	6		60	
	3,2	3,6	2,9	3,3	3,5	7		80	
4	3,7	4,1	3,4	3,8	4	8		100	
	4,2	4,6	3,9	4,2	4,5	9		125	
5	4,7	5,1	4,3	4,7	5	10		180	
6	5,2	6,1	4,8	5,6	6	12	+0,3	210	
	6,2	6,6	5,7	6,1	6,5	13	0	250	
7	6,7	7,1	6,2	6,6	7	14		320	
8	7,2	8,2	6,7	7,5	8	16		410	
	8,3	9,0	7,6	8,2	9	18		500	

Please note that these instructions are only applicable to products produced and supplied by Talurit AB, Sweden and Gerro GmbH, Germany!



Round copper End stop (RCU) (copper)

RCU end stops: The RCU end stops are not recommended for use in high strength applications.

Wire rope: Above table applies to wire ropes made of stainless steel, bright or galvanized single layer steel wire ropes with round strands and rope grade 1 570 – 1 960. Wire ropes shall conform to EN 12385-4 and 5. The types of rope shall be Ordinary or Lang lay. For higher tensile grade and higher Fill factor, please contact our Technical Department.
Note! Stainless steel as a material is not included in the EN standard for wire ropes.

Swaging: The R end stops are swaged according to our specified swaging method for R and RCU end stops

Note! Ends stops, type **RCU**, are not allowed to use for lifting applications. The expected strength regarding this end-termination is approximately 50% of the MBL of the wire rope (informative only). Accordingly, verifying tests must be performed to secure the strength of the application.

End stops made of copper, type **RCU**, have many application areas. One of them being the use together with wire ropes made of stainless steel. This is especially advantageous to reduce the risk of galvanic corrosion problems.

f = Fill factor, is the ratio between the sum of the nominal metallic cross-sectional areas of all the wires in the rope and the circumscribed area of the rope based on its nominal diameter.

C = Nominal metallic cross-sectional area factor of the rope.

$$C = \frac{f \cdot \pi}{4}$$

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Splicing Instructions

SWAGING INSTRUCTIONS

FOR END STOPS



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SELECTION OF END STOPS

FOLLOWING END STOPS ARE INTENDED FOR USE ON STEEL WIRE ROPES MADE FROM CARBON STEEL:

- ES (End stop)
- ESP (End stop with pad eye)
- R (Round ferrule/end stop)
- RCU (Round copper ferrule/end stop)



SELECTING THE CORRECT SIZE OF END STOP:

The correct size of end stop is selected from the applicable table for each type end stops. Note applicable rope types in each table. All our end stops comply with this quality specification and to other material specifications stated in the ruling standards.

Selecting the correct size of an end stop is based on the following criteria: The rope grade, the diameter of the wire rope, the fill factor or metallic cross-sectional area factor, the wire rope core i.e. fibre core (FC) or steel core (IWRC= independent wire rope core).

Example of end stop selection table

End stop No.	Wire rope diameter $f=0,61-0,76$ (mm)		Press dies marked	Press dies Type	Diameter after swaging (mm)	Tolerance	Length, L after swaging approx. (mm)	Required pressure approx. (kN)
	min	max						
ES 13 D30	13,0	13,9	ES D30	D	30	+0,3 0	90	3 000
ES 14 D30	14,0	14,9						
ES 15 D30	15,0	15,9						
ES 16 D36	16,0	16,9	ES D36	D	36	+0,4 0	108	4 000
ES 17 D36	17,0	17,9						
ES 18 D36	18,0	18,9						
ES 19 D44	19,0	19,9	ES D44	D	44	+0,4 0	126	5 000- 6 000
ES 20 D44	20,0	20,9						
ES 21 D44	21,0	21,9						
ES 22 D44	22,0	22,9	ES D52	D, E or E1	52	+0,4 0	144	7 000- 9 000
ES 23 D52	23,0	23,9						
ES 24 D52	24,0	24,9						
ES 25 D52	25,0	25,9	ES D58	D, E or E1	58	+0,5 0	174	8 000- 12 000
ES 26 D52	26,0	26,9						
ES 26 D58	26,0	26,9						
ES 27 D58	27,0	27,9	ES D64	D, E or E1	64	+0,6 0	192	12 000- 15 000
ES 28 D58	28,0	28,9						
ES 29 D58	29,0	29,9						
ES 30 D64	30,0	30,9						
ES 31 D64	31,0	31,9						
ES 32 D64	32,0	32,9						

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Splicing Instructions

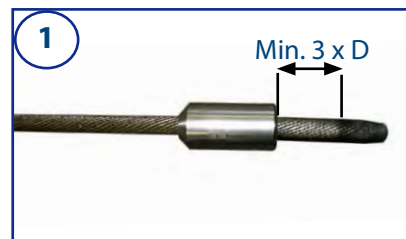
ASSEMBLY OF END STOPS: ES

ASSEMBLY OF WIRE ROPE IN END STOPS: TYPE ES

1. The intact part of the wire rope shall not have any signs of annealing (black part) and the distance shall be at least $3 \times D$ (the diameter of the wire rope) before swaging.

Note! The wire rope inside the end stop must not be annealed.

Make sure that the diameter of the rope is within the diameter limits given in the table. If the diameter deviates, please contact our Technical department for information.



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Splicing Instructions

SWAGING INSTRUCTIONS FOR: ES

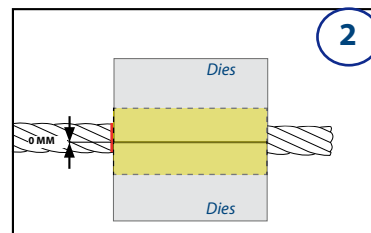
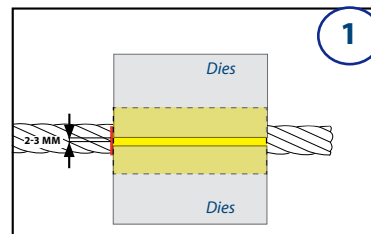
SWAGING INSTRUCTIONS FOR: TYPE ES

1. Lubricate with TALUGREASE before and after each swaging. It is important to close the press dies as much as possible in the first swaging operation. Flash material must not flow in between the supporting area of the press dies to avoid damaging the dies. Normally it is enough having 2-3 mm between the dies after the first swaging.

2. Turn 90° to press the irregularity and try to close the dies. Repeat until there is no more excess material. Up to 10 swaging operations can be necessary. If more swaging operations are required, please contact our technical department for further information.

3. Make sure that no annealed part of the wire rope is inside the end stop after swaging.

4. Check the diameter of the end stop after swaging. Cut the protruding wire rope in the dead end if necessary.



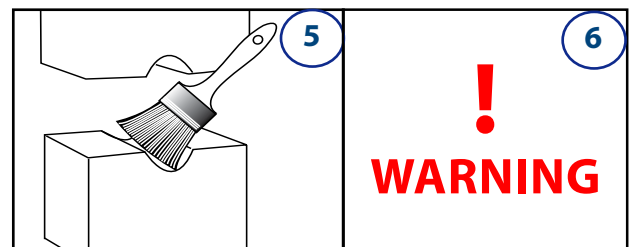
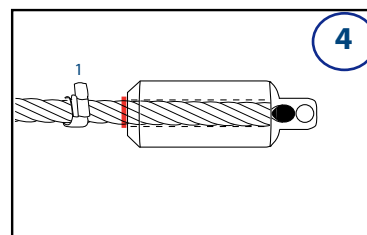
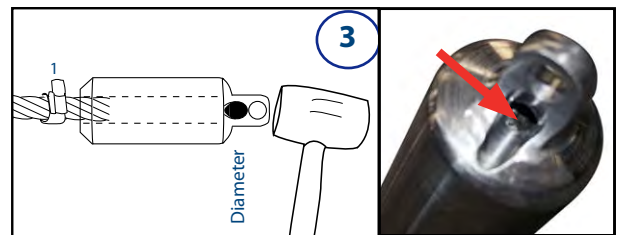
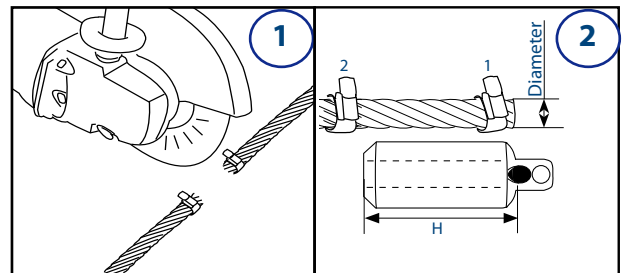
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Splicing Instructions

ASSEMBLY OF END STOPS: ESP

ASSEMBLY OF WIRE ROPE IN END STOPS: TYPE ESP

- 1.** Cut the wire rope with a disc between two narrow tightened hose clamps.
- 2.** Measure the diameter of the wire rope at the largest and choose end stop in the applicable table. Find the insertion length, H, in the table. Add an extra hose clamp (2) outside the insertion length.
- 3.** Insert the wire rope in the end stop. Then loosen the hose clamp (1) slightly. Hammer the end stop into position with a rubber mallet. Verify in the inspection hole that the wire rope has entered completely.
- 4.** Mark the wire rope to make sure the end stop stays in position. Tighten the hose clamp approximately 3-5 cm from the end stop. Keep the hose clamp on the wire rope during the entire swaging operation. Remove it afterwards.
- 5.** Lubricate the bore of both dies. Apply oil on the edge of the lower die, for oil drop test.
- 6.** Reduce the pressure with the pressure regulating valve not to overload dies.



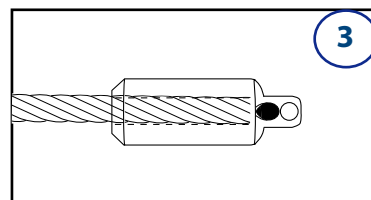
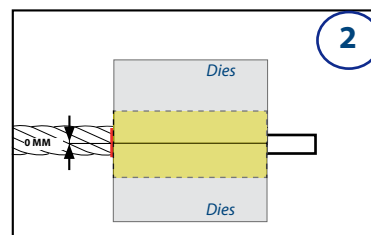
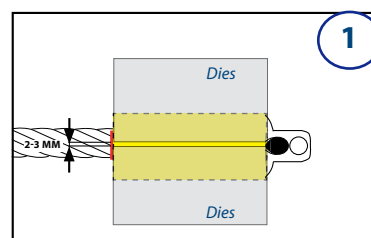
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Splicing Instructions

SWAGING INSTRUCTIONS FOR: ESP

SWAGING INSTRUCTIONS: TYPE ESP

- 1.** Check that the mark on the wire rope remains at the end stop. Lubricate with TALUGREASE before and after each swaging. It is important to close the press dies as much as possible in the first swaging operation. Flash material must not flow in between the supporting area of the press dies to avoid damaging the dies. Normally it is enough having 2-3 mm between the dies after the first swaging.
- 2.** Turn 90° to press the irregularity and try to close the dies. Repeat until there is no more excess material. Up to 10 swaging operations can be necessary. If more swaging operations are required, please contact our technical department for further information.
- 3.** Check the diameter of the end stop after swaging.



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Splicing Instructions

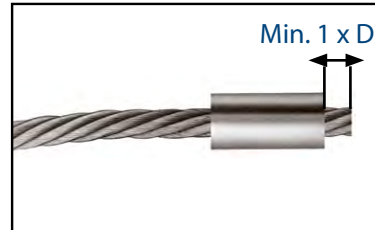
ASSEMBLY OF END STOPS: R AND RCU

ASSEMBLY OF WIRE ROPE IN END STOPS: TYPE R AND RCU

1. The wire rope shall not have any signs of annealing (black part) and we recommend the distance to be at least $1 \times D$ (the diameter of the wire rope) before swaging.

Make sure that the diameter of the rope is within the diameter limits given in the table. If the diameter deviates, please contact our Technical department for information.

Note! The wire rope inside the end stop must not be annealed.



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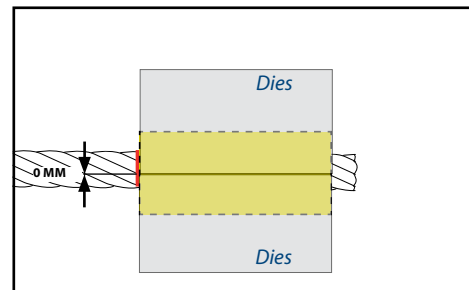
Splicing Instructions

SWAGING INSTRUCTIONS FOR: R AND RCU

SWAGING INSTRUCTIONS FOR: TYPE R AND RCU

1. Lubricate with TALUGREASE before each swaging. Use the same dies as for T-ferrules. Use the regulating valve on the swager to find the correct pressure in addition with an oil drop test *. On completion of the swaging operation, the dies shall meet and swaging must stop! Do not overload the dies. The ferrule shall be pressed in one direction, without being turned. Fins or flash material shall be removed by a grinding method without damaging or reducing the round diameter of the ferrule. Any flash material shall not be pressed back into the ferrule.

* Oil drop test: Place a drop of oil on the supporting edge of the lower die. Use the regulating valve to close the dies. When the oil drop is pressed out of the closing dies, the accurate pressure is achieved.



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Splicing Instructions

CHECKING AND MARKING AFTER SWAGING

CHECK THE CONDITION OF THE SWAGED END STOP

Check that the end stop has been properly swaged and the wire rope is correct in alignment. Each end stop shall be visually examined, free from flaws and defects and shall not exhibit any sharp edges or rough surfaces.

CHECK THE DIAMETER AFTER SWAGING

At each set-up the swaged end stop shall be dimensionally checked to verify that it is within the diameter and when applicable length limits specified in the tables for end stops. Each swaged end stop after the set-up shall be checked for diameter to verify that it is within the diameter limits.

MARKING OF END STOPS AFTER SWAGING

Marking of swaged end stops should be carried out according to ruling standards.

The swaged end stop shall be legibly and indelibly marked with the swaged end stop manufacturer's name, symbol or mark and traceability code identifying the assembly with a certificate.

The certificate shall include at least the following information:

- name and address of the swaged end stop manufacturer and, if appropriate, his authorized representative, including the date of issue of the certificate and authentication ;
- number and relevant part of the European Standard
- description of the assembly; and
- traceability code as per marking



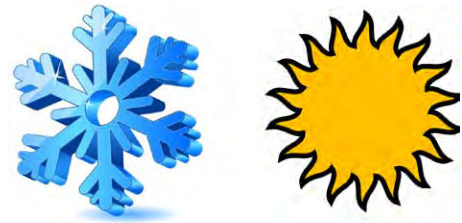
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Splicing Instructions

USAGE AND SCRAPPING

NON SUITABLE ENVIRONMENTS

End stops made from aluminum and copper shall not be exposed to temperatures outside the range:
-40°C to 100°C (IWRC)



CHECK FOR DEFORMATION AND CHECK DIAMETER

Slings shall be taken out of use if their end stops have been exposed to deformation or when the outer diameter has been reduced to less than 95% of the original diameter.

Through the years we have declared that machines alone will not do the job. We pride ourselves on our after care service. Satisfied customers has always been a top priority and this includes giving our customers the advice and practical help they need, when they need it. Once the machines are installed, maintenance and technical service will minimize down time.

TECHNICAL SERVICE <i>Quick problem solving on site!</i>	
Web	Request our services on the website, under <i>Product range</i> , or go to FAQ under <i>Customer area</i> .
Email	Request our services at: <ul style="list-style-type: none"> • service@talurit.se • service@talurit.co.uk
Telephone	+ 46 31 709 30 93 (Swedish working hours, GMT +1) + 44 1226 369960 (British working hours, GMT) + 49 7731 97030 (German working hours, GMT +1) + 65 96391512 (Singapore working hours, GMT +8) + 86 665742132 (Japan working hours, GMT +9)
Telephone 24/7	+ 46 708 298 993
PRODUCTION SERVICE <i>Regular maintenance and repair contribute to efficient and safe production. We can offer:</i>	
Maintenance & repair	<p>We will perform maintenance on a regular basis e.g. yearly or specific occasions.</p> <p>When repairs are necessary we have skilled technicians ready to assist you over the phone or on site.</p> <p>Example of swager maintenance</p> <ul style="list-style-type: none"> • Change sealings (piston and bottom) • Change valve house • Change guide ring • Change return springs • Troubleshooting electric and electronic system • Check piston clearance (due to worn guide rings)
Spare parts	Our in-house production and extensive stock can provide spare parts for both old and new machines.
Refurbishment	<p>Refurbishing machines at our service centres in UK or Sweden worn parts can be replaced and the machine can be upgraded to new standards.</p> <p>Example of swager refurbishment</p> <ul style="list-style-type: none"> • New electric system with features like "hold position", stroke limiter, automatic stop etc. • Die holders • Cylinder honing or cylinder sleeve • Guiding rings • Return springs
Optimized production	With our long know-how we can offer various solutions.



Service technician



Well organised stock



A refurbished 2000-ton swager, now equipped with rigging device



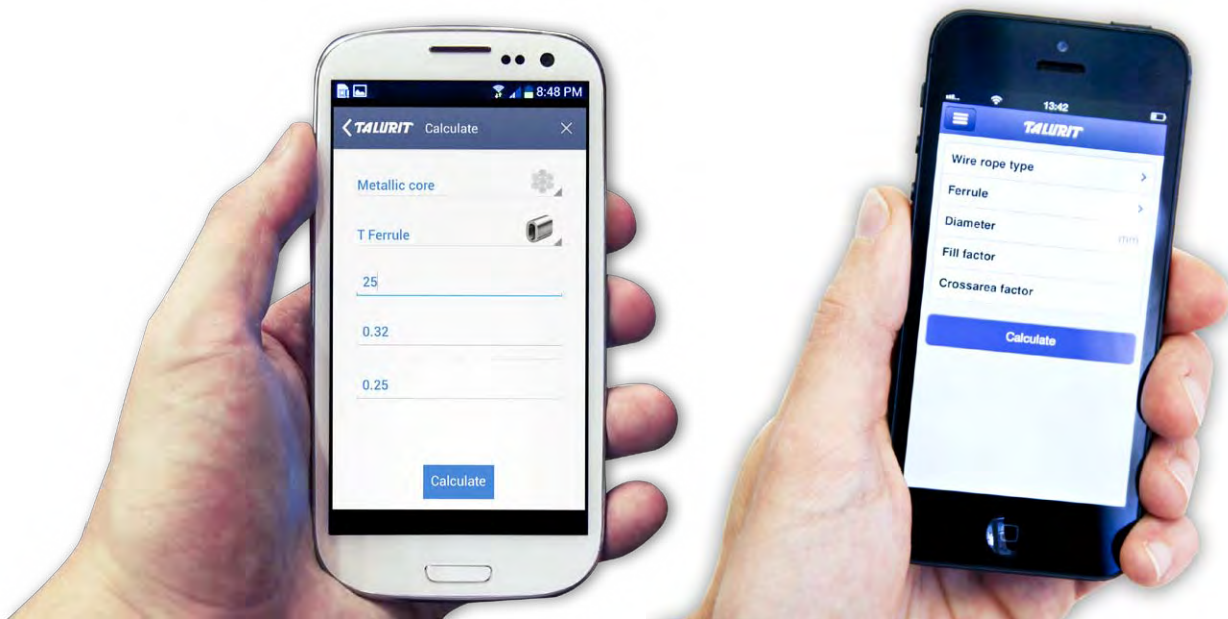
Refurbished dies

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Splicing Instructions

TALURIT™ SPLICING CALCULATOR

- AVAILABLE FOR BOTH ANDROID AND IOS



TALURIT™ SPLICING CALCULATOR

The TALURIT Splicing Calculator is now available for both Android and IOS. This app is an excellent tool for those who need help selecting the correct ferrule for different types of wire ropes. The calculator can be used to calculate the right size of ferrules, as well as providing guidance for choosing the right die sizes.

The app contains tables for selections of various types of ferrules. The tables are based on European standards and TALURIT specifications.

IMPORTANT!

This app is only compatible with TALURIT mechanical splicing systems.



Download the app for
Android here



Download the app for
IOS here

The 2000T Swager

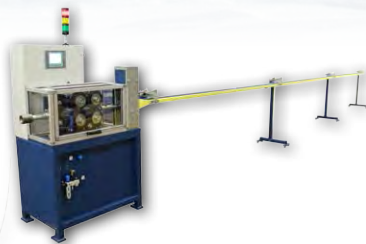


- Safe
- Production efficient
- Affordable
- Smart rigging options

Range of swagers: 20 to 4200T



Wire Rope
Cutting Machine
LK 40



Wire Rope
Automatic Cutting Machine
LKA 28 PS



Wire Rope
Annealing Machine
AV 40



Wire Rope
Coiling Machine
UL 800



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